This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.

+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.

+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.

+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`

NE MEDICAL LIBRARY STANFORD
45 0421 4565

LIBRARY

LIBRARY
NECOLOGY

THE
CASE HISTORY SERIES

CASE HISTORIES IN MEDICINE

BY

RICHARD C. CABOT, M.D.

Second edition, revised and enlarged

CASE HISTORIES IN PEDIATRICS

BY

JOHN LOVETT MORSE, M.D.

Second edition, revised and enlarged

ONE HUNDRED SURGICAL PROBLEMS

BY

JAMES G. MUMFORD, M.D.

Second Printing

CASE HISTORIES IN NEUROLOGY

BY

E. W. TAYLOR, M.D.

Second Printing

CASE HISTORIES IN OBSTETRICS

BY

ROBERT L. DENORMANDIE, M.D.

CASE HISTORIES IN DISEASES OF WOMEN

BY

CHARLES M. GREEN, M.D.

CASE HISTORIES
IN
DISEASES OF WOMEN

INCLUDING

ABNORMALITIES OF PREGNANCY, LABOR, AND PUERPERIUM

A CLINICAL STUDY OF PATHOLOGICAL CONDITIONS
CHARACTERISTIC OF THE FIVE PERIODS
OF WOMAN'S LIFE

BY

CHARLES M. GREEN, A.B., M.D.
Professor of Obstetrics and Gynæcology in Harvard University, Senior Surgeon for Diseases of Women, Boston City Hospital, Visiting Physician, Boston Lying-in Hospital

With 11 full-page plates, one cut and 25 charts in the text

BOSTON
W. M. LEONARD, PUBLISHER
1915

B

Copyright, 1915,
By W. M. Leonard.

LANE LIBRARY

N208
G79
1915

UXORI CARISSIMAE

42152

PREFACE

EARLY in his experience as a teacher the writer found that he could interest and instruct medical students, and make them think, by the use of written reports of cases. In clinical teaching, time and circumstances often do not permit a consideration of all the bearings of a given case or its relation to other cases: moreover, it is neither kind nor wise to discuss a case fully in the presence of the conscious patient; and certainly not, to touch upon the prognosis, unless it be most favorable. Besides, the diagnosis arrived at may be wrong, or incomplete; and, if the same group of students happens not to see the patient again, such errors may never come to their knowledge. Then, granting that the student sees administered the treatment thought best by the teacher at the time, there may not be favorable opportunity to discuss other methods of dealing with the case, or the reasons why the chosen line of treatment was adopted. Again, in a busy clinic hour, there may not be time for a careful consideration of ætiology. In a clinical exercise, then, it may be said that a student most profitably seeks to educate his eyes and his sense of touch, — to learn physical examination and the technique of treatment, to train his powers of observation, and to acquire deftness with his fingers. But when a case is well written up, and irrelevant details eliminated, it may profitably be gone over with a class in retrospect: then pathological reports are available, errors in diagnosis and the reasons for them may be examined, and the results of treatment are known. Then, too, by a well-directed use of the Socratic method of asking questions, a teacher may lead his students to think out the reasons why, and to understand the reciprocal relationship between pathological conditions and physical signs and symptoms. In this method of teaching the mind is trained: so, by the combination of clinical teaching and case teaching, knowledge may be converted

into wisdom, the experience lacking in the student being supplied by that of the teacher.

The writer developed and made use of a system of case teaching in the early days of his Summer Courses in Obstetrics, and was so far convinced of its pedagogic value that in the autumn of 1890 he sought permission of the Faculty of Medicine to give voluntary exercises by this method in the Harvard Medical School. Permission was granted, and case teaching in obstetrics was begun as a voluntary exercise in January, 1891. It was subsequently made a regular part of the curriculum, and the writer employed the method for many years in teaching gynæcology.

It is hoped that the material presented in this series of cases may be of service to teachers and students, and helpful to graduates who would like to review their knowledge of pathological obstetrics and of the diseases of women, and who may not be able to take graduate courses in a medical school or hospital.

The writer would express his thanks and sense of obligation to Dr. Robert M. Green, who has loyally assisted him in selecting cases from hospital records, in reading proofs, and in the preparation of plates and charts.

78 Marlborough Street, Boston,
March 18, 1915.

TABLE OF CONTENTS

SECTION I. — INFANCY AND CHILDHOOD. PAGE

Introduction 3
Functional Disorders 3
Malformations. 3
Infections 3
Traumata 4
Neoplasms 4
Illustrative Cases 5

SECTION II. — PUBERTY AND ADOLESCENCE.

Introduction 19

Functional and Symptomatic Disorders:

1. Amenorrhœa 19
2. Dysmenorrhœa 20

Malformations and Displacements 21
Infections 21
Traumata 21
Neoplasms 22
Illustrative Cases 23

SECTION III. — MATURITY.

Introduction 71

Functional Disturbances:

1. Disorders of Menstruation 73
2. Dyspareunia 74
3. Sterility 75
4. Disturbances of Pregnancy 76
5. Pathologic Labor 78
6. Pathologic Puerperium 88

Malformations and Displacements:

1. Malformations 93
2. Displacements of the Uterus 94
3. Splanchnoptosis. 97

Infections:

Vulvitis, vulvo-vaginitis, vaginitis, endocervicitis, endometritis, metritis, salpingitis, oöphoritis, peritonitis, pelvic inflammation, thrombo-phlebitis, pyæmia, septicæmia 98

Traumata: PAGE
Of the Vulva and Vagina 100
Of the Vaginal Outlet and Pelvic Floor 100
Of the Cervix 101
Of the Vesico-vaginal and Recto-vaginal Septa 103
Of the Uterus 104
Neoplasms:
Of the Vulva 105
Of the Vagina 107
Of the Uterus 107
Of the Ovary 109
Illustrative Cases 111

SECTION IV. — THE CLIMACTERIC.

Introduction 407
Functional Disturbances 407
Malformations and Displacements 408
Infections 409
Traumata 409
Neoplasms 409
Illustrative Cases 412

SECTION V. — ANILITY.

Introduction 437
Functional Disturbances 438
Malformations and Displacements 438
Infections 438
Traumata 439
Neoplasms 439
Illustrative Cases 441

INDEX 457

SECTION I

INFANCY AND CHILDHOOD

INFANCY AND CHILDHOOD

During infancy and childhood the female reproductive organs are happily for the most part free from pathologic conditions and are functionally dormant; they participate only in the gradual development of the body until the time shall come for the great transition to womanhood at the age of puberty. The following conditions, however, are occasionally brought to the gynæcologist's attention:

1. Functional Disorders

Probably the chief functional genito-urinary disturbance observed in infancy and childhood is enuresis. The phenomenon of precocious menstruation is not infrequently the cause of maternal anxiety, and calls for differential diagnosis from hæmorrhagic disease of the newborn, of which vaginal bleeding may be a manifestation, and from uric acid staining, sometimes resultant from the highly concentrated urine of early infancy before lactation is established.

2. Malformations

It is not profitable in this place to discuss the numerous possible congenital malformations and anomalous conditions of ovary, tube, uterus, vagina, and vulva. Most of these anomalies are neither discovered nor wisely treated until puberty or later. Certain conditions, however, cause early and urgent symptoms, and call for prompt surgical treatment, such, for example, as imperforate anus or rectum, and extrophy of the bladder. Persistent cloaca may sometimes profitably be treated in childhood, and some cases of ovarian hernia.

3. Infections

Of the various known and unknown exciting causes of vulvo-vaginal inflammations in infancy and childhood probably the most frequent is the gonococcus, coming from the

ignorant use of infected bed-linen, bath-cloths, towels, and sponges, but more frequently from the unclean fingers of infected persons. Gonorrhœal vulvo-vaginitis is occasionally observed in a number of young girls attending the same school, or habitually playing together, and is evidently attributable to mutual, lascivious handling of the parts, when one child only had been primarily infected. Next to the gonococcus, filth and general uncleanliness, especially in the puny and ill-nourished, are the most frequent ætiological factors in vulvo-vaginal inflammation; and to these causes may be added the mechanical irritation of rubbing and scratching the parts to relieve itching due to pinworms or to irritating urine. As a result of inflammation there may be more or less extensive suppuration, with the formation of adhesions between the labia, vaginal walls, or between the clitoris and its prepuce.

Ulcerative processes involving the genitalia occur in young infants by extension of streptococcus infection of the navel, and are occasionally observed in children as sequels to diphtheria, scarlet fever, smallpox, and noma. If the young patient survives the primary infection, there may remain cicatrices and deformities which will call for surgical care at the time of puberty or later.

4. Traumata

The most common traumata of the genitalia are the contusions from falls, blows, or kicks, and penetrating wounds from impalement. To these should be added the possible injuries of attempted rape, and the introduction of foreign bodies into vagina or bladder.

5. Neoplasms

Of the neoplasms incident to infancy and childhood the most common are tumors of the ovary, notably cystoma, and sarcoma.

Cases illustrating some of the above-mentioned conditions follow.

CASE I

A slender, ill-disciplined, preternaturally active child, eight years old and rather large for her age, had good health except for frequent attacks of tonsillitis. She had always been subject to occasional bed-wetting; but for the past six months this habit had grown more frequent and troublesome. At her physician's suggestion the tonsils had been removed. This relieved her of tonsillitis and improved her general health, but had no effect on the bed-wetting. She was occasionally troubled also with diurnal enuresis. Medicines and the practice of waking her in the night for urination had been tried without benefit.

Diagnosis and Treatment. — General physical examination showed no abnormality. The urine was normal and not over-concentrated. There were no adhesions or local irritation about the clitoris. The child usually went to bed at eight. It was directed that she should drink no fluid after six, should empty the bladder just before going to bed, should sleep with the foot of the bed elevated six inches, and should be wakened for micturition at nine. This treatment had no appreciable effect.

Comment. — As a matter of fact, enuresis, which most commonly occurs in children of this type, is usually a habit, and in the absence, or after the removal, of sources of local irritation, can be cured only by helping the patient to control the habit. This may be done by suggestion, suasion, discipline, reward, punishment, anything that will make the control seem desirable and worth while. The nature of the situation should be explained to the parents, and the doctor himself should talk with the child. The child should not be frightened; but appeal should be made to its sense of shame, its desire to be like others, its wish to have or do something which is to be denied, if it cannot control the habit. With sufficient persistence and tact a cure can always be effected in time.

In the present instance it was apparently aided by the use of cold water showers or perineal douches at night just before bed-time. This method has proved of great benefit in many

cases. It acts partly by toning the striated muscle system, partly as a moral stimulus, since it is usually much disliked and affords a subconscious motive for the control of the habit.

CASE II

A girl of two years, apparently in perfect health, and not troubled with enuresis, was observed several times a day to become quiet while at play, and lie or sit rubbing the thighs together for a time, and then remain still as if exhausted, frequently dropping asleep. All attempts by mother and nurse to check this habit had proved futile, and medical advice was sought.

Diagnosis. — Physical examination showed no abnormality except that the prepuce was tightly adherent about the clitoris, which appeared somewhat enlarged and reddened. Attempts to break up these adhesions without an anæsthetic were only partly successful; and as the habit of thigh-rubbing persisted circumcision was advised.

Treatment. — Under ether, the adhesions were thoroughly broken up and the glans clitoridis completely freed, a large amount of smegma being found about it. The somewhat redundant and thickened prepuce was then drawn downward and resected peripherally with scissors, as in doing a male circumcision. The bleeding edges of mucous membrane were then united with one medial and two lateral stitches of number oo catgut. Boric ointment was kept constantly applied to the wound on a vulval pad for ten days.

Result. — The wound completely healed in ten days, and the glans clitoridis was entirely free. There was no return of the habit of thigh-rubbing.

Comment. — Thigh-rubbing or other forms of masturbation are not infrequently observed in little girls with enuresis, or may occur independently. In either case the habit apparently originates from some local irritation about the vulva, such as intertriginous eczema, alkaline or excessively acid urine, or glycosuria. Such causes should be determined and corrected, when the habit will usually cease; if not, it must be checked by methods similar to those described in connection with enuresis. As shown by the above case, another cause of local genital irritation is preputial adhesions about the clitoris, accompanied with accumulation of smegma, as in adherent phimosis of male infants. As in males, the

value of circumcision in the treatment of masturbation in little girls is at least partly punitive, and the operation must often be supplemented by moral and disciplinary measures to break completely the vicious circle of habit.

Case III

A healthy girl of four years had a right inguinal hernia, previously always reducible, and held by a yarn truss. A week prior to her first visit the hernia became irreducible, and caused considerable pain, but no symptoms of strangulation.

Diagnosis. — Physical examination revealed nothing abnormal except a rounded, sensitive mass, the size of a walnut, in the upper portion of the right labium majus. From this mass the neck of a hernial sac could be felt extending up into the inguinal canal, over which there was slight impulse on coughing. There was no fever or vomiting, and the bowels had moved freely by enema. In arriving at a probable diagnosis it was borne in mind that the ovary or Fallopian tube or both may be a content of inguinal hernia in the female, and the ovary may thus descend into the labium majus and form a rounded sensitive mass, as found in the present case, requiring differentiation, however, from abscess or cyst of Bartholin's gland and from hydrocele of the canal of Nuck. It was clear from inspection and touch that the walnut-sized mass in the upper part of the labium majus was neither of these possibilities, and a probable diagnosis was made of ovarian hernia.

Treatment. — An incision was made as usual for the radical cure of inguinal hernia. On opening the sac the mass was found to be the ovary with the fimbriated end of the Fallopian tube attached. Ovary and tube were easily reduced into the abdominal cavity, and the wound was closed in layers in the usual manner.

Result. — The patient had a normal convalescence.

Comment. — Healthy tubes or ovaries occurring in hernial sacs should be thus dealt with. Tubercular or otherwise diseased organs should be resected. Unlike the analogue in the male, there seems to be no especial tendency of ovaries thus replaced to become sarcomatous.

CASE IV

A healthy girl five years old had been observed by her mother for a fortnight to have a vaginal discharge which soiled her clothing, and she complained of soreness about the genitalia. She had had no previous similar trouble.

Diagnosis. — General physical examination revealed nothing abnormal. The vulva was reddened, slightly swollen, sensitive to touch, and on separation of the labia the parts were found to be bathed with a thin, milky fluid: microscopic examination of a smear showed the presence of the gonococcus. Further investigation revealed the fact that at the kindergarten which the child attended several other little girls were affected with a similar discharge. There was a common towel in the toilet room which they all used.

Treatment. — The nature of the affection and the probable manner of its acquisition were explained to the mother. She was made to understand the relative harmlessness of the infection in its present form, but the risk of its transference to the eyes and to other persons. It was directed that the child should be taken from school and not allowed to play with other children.

With a glass syringe two ounces of 10 per cent argyrol were slowly injected into the vagina and allowed to run out into a douche pan. The genitalia were then gently washed with soap and warm water, dried, and lightly dusted with calomel and starch in equal parts. A small sterile pad was pinned to the clothing to catch and absorb the vaginal discharge. The mother was directed to renew this pad as often as necessary, burning the soiled pads and using every precaution in cleaning her own contaminated fingers. She was also directed to repeat the bathing and dusting-powder after each micturition. The child was instructed not to handle the parts, and never to rub her eyes with her fingers.

For a week the child was brought daily for treatment. The amount of discharge immediately diminished, and the redness and soreness became much less. After a few days the argyrol instillation was replaced by a more copious irrigation of 1 per cent protargol, given through a funnel attached

to a sterile soft rubber catheter. During the second week the patient came only every other day: at the end of this time, no gonococci could be found in the much diminished discharge, and the redness, swelling, and soreness had disappeared. The irrigating antiseptic was now changed to boric acid, given only every third day, and soon omitted. The discharge had ceased, and did not re-appear upon cessation of treatment: continued local cleanliness was enjoined.

Result. — The child was discharged well, six weeks after the first appearance of symptoms.

Comment. — This case may be regarded as fairly typical in clinical cause and result, when treatment is begun fairly early; neglected cases become chronic, however, and continue for a long time to show the gonococcus in the discharge. In obstinate chronic cases autogenous vaccines are said to be useful. Before the days of argyrol and protargol, permanganate of potassium was preferred by some to silver nitrate. Silver irrigations should not be continued after the gonococci have disappeared, as they tend to keep up a mucous discharge. Local cleanliness and intelligent carrying out of prescribed treatment are essential to successful results: among the well-to-do, busy or undisciplined mothers must give place to trained nurses: among the ignorant poor, hospital care is desirable both for the successful treatment of the infected and for the protection of the uninfected.

CASE V

A large, healthy school-girl ten years of age, while coasting, ran against the sharp end of a stick of wood: although hurt, she was able to walk some distance to her home. A physician seeing the case did not succeed in making a conclusive examination on account of bleeding from the genitals; but he applied a vulval dressing and sent the girl to the hospital.

Diagnosis. — Examination revealed a lacerated wound of the perineum, extending through the fourchette to more than half way to the anus and three-fourths of an inch up the vaginal wall: the internal tear passed to the left of the median line, partly severing the left levator ani, which had retracted upward. The vaginal mucosa was considerably bruised and there was some bleeding from the wound.

Treatment. — It was necessary to give ether to examine effectively, and a plastic operation was thereupon proceeded with: the partly severed muscle and vaginal mucosa were brought together with chromic catgut, and the external wound closed with silkworm-gut sutures deeply applied. The bowels were kept open with cathartics, and the stitches were removed on the tenth day.

Result. — The wound healed without suppuration, and the girl was discharged well.

Comment. — This case illustrates very well a type of penetrating genital trauma; but not all cases are so easily repaired. When the wound is very ragged, and especially if it is already infected, it is better to use local antisepsis and defer plastic operation. Contusions may need evaporating lotions or ice-bag, and sometimes vulvo-vaginal hæmatomata require incision and drainage.

CASE VI

A frightened girl of five years is brought by her more frightened mother with the story that some pins, which had been used to scratch the little girl's genital organs, had slipped into her vagina, wherein the mother could feel them, but whence she could not remove them: there was no other complaint.

The **diagnosis** proved to be correctly made by the mother, and it remained only to remove the pins by appropriate means.

Treatment. — Owing to the fright of the child and the small, intact introitus it was impossible to explore the vagina without anæsthesia. With the child under primary ether two ordinary pins were found lying side by side, longitudinally in the vagina, with the points downward. On removing them with forceps the pins were fresh and bright in appearance, were not imbedded, and the removal caused no bleeding.

Comment. — The real truth in this case as to how the pins came to be lost in the vagina did not appear. It is well known that girls and young women may use the heads of pins, crochet needles, indeed any conceivably suitable object, either to titillate the parts or to explore the great mystery of genital anatomy: nurse girls have been known thus to operate upon the genitalia of their charges. Sometimes any sort of foreign body is thus lost in vagina or bladder, and possibly may perforate or become imbedded. No rule can be given for removal of such foreign bodies; surgical sense must show the way *secundum artem*.

CASE VII

A girl of four years had been feverish the fourth day previous to hospital admission, but felt better the next day and was able to walk about. Later in the day she had some difficulty in voiding urine and there was considerable mucus in the fæcal discharge. The next day there was abdominal tenderness. On admission to hospital she complained of abdominal pain, and of difficulty in passing urine; a cathartic was necessary.

Diagnosis. — The abdomen was somewhat distended, tympanitic, and slightly rigid; the bladder was distended, but no masses were felt. Owing to the uncertainty of diagnosis the child was kept under observation for a week: there seemed to be general abdominal tenderness, more localized in the right iliac fossa and at McBurney's point. At one time an ovoid tumor was found extending from the pubes to the umbilicus: the withdrawal by catheter of 10 ounces of urine proved this tumor to be a distended bladder. Recto-abdominal examination failed to detect any pelvic anomaly. Finally a probable diagnosis of appendicitis was made, with a possibility of encysted tubercular peritonitis.

Treatment. — An incision was made along the outer border of the right rectus, below the umbilicus, and the peritoneum opened; a bluish mass presented, towards the median line. The appendix, found curled upon itself and hidden behind the cœcum, showed no signs of inflammation, although there were clots in its mesentery: the appendix was removed, the stump cauterized and buried, and attention turned to the bluish mass, which was found to fill the pelvis. After the separation of numerous omental and intestinal adhesions, the mass was found to be a cyst of the left ovary, which was removed and the abdomen closed without drainage.

Result. — The convalescence was uneventful; there was no further retention of urine, and the girl was discharged, well, on the tenth day.

Pathological Report. — Appendix: serosa slightly injected, superficial vessels very prominent, mucosa injected. Pelvic

tumor: 10 cm. in diameter, with pedicle; thin, translucent cyst-wall containing blood-stained, watery fluid; attached to one side is a yellowish mass containing some highly refractive crystals.

Comment. — This case illustrates very well the difficulty in diagnosis of pelvic tumor in young children. In the light of what was found at operation it would seem that more diagnostic importance should have been given to the symptoms of constipation and retention of urine, to the latter especially, both of which disturbances were due to pressure of the ovarian cystic tumor.

CASE VIII

A well-developed and well-nourished country girl, except for an attack of measles when three years old, had presented no pathological conditions until a wart-like growth appeared on the vulva nine months later; in five months this growth had reached the size of a hen's egg. She was taken to a neighboring hospital and the tumor was said to have been removed. Four months later, when four and a half years old, the child was brought to Boston for advice. She was then in poor general condition, she slept very little, and had considerable difficulty in voiding urine.

Diagnosis. — From the vulva there protruded an ulcerating mass the size of a small hen's egg; the inguinal glands were enlarged; there was a hard, non-tender, retro-vesical tumor extending from the symphysis to just above the umbilicus and nearly filling both iliac fossæ. The neoplasm was evidently malignant, and a portion of the protruding mass was removed for histological diagnosis: the pathologist's report was sarcoma, probably the congenital, so-called mixed type.

Treatment and Result. — Because of the size of the abdominal mass and its evident firm adhesion to all surrounding structures an attempt at removal seemed injudicious, and the child was discharged unrelieved: she died three months later of general abdominal sarcomatosis. Autopsy showed the growth to have originated in the right ovary.

Comment. — This growth in children is particularly malignant, and surgery gives little hope of radical cure.

SECTION II

PUBERTY AND ADOLESCENCE

PUBERTY AND ADOLESCENCE

This important epoch in woman's life should not be regarded as embracing solely the establishment of the menstrual function, which is often accomplished in a few months, but the period necessary for complete physical development to maturity. The length of this period will necessarily vary in accordance with heredity, environment, and the circumstances of life. But when it is remembered that during this period the young girl is not only undergoing important physical and psychic changes, but the strain of secondary education, and oftentimes the distractions of social life, and of the acquisition of "accomplishments", it should be appreciated that this period in a young woman's life requires most careful supervision. Wise mothers often seek the advice of wise physicians in regard to the diet, hygiene, exercise, amusements, and habits of study of their pubescent daughters, well knowing that errors of regimen during adolescence often result in functional disorders, nervous instability, imperfect development, sterility, unfitness for childbearing, invalidism, and unhappiness. In no field of medicine is wise prophylaxis more urgently needed.

The diseases incident to this period may conveniently be grouped as follows:

1. Functional and Symptomatic Disorders

I. Amenorrhœa (not due to physiological causes).

(*a*) Primary, due to absence of the reproductive organs or to failure of development. (See Malformations.)

(*b*) Secondary, after the function has been normally established. Either form may be attributable indirectly to acute infectious diseases, to chronic affections, such as tuberculosis, anæmia, chlorosis, nephritis, obesity, to various nervous and mental

disorders, emotion, fright, to diversion of energy by over-study or undue social activities, and to change of climate and sea-voyage. Cystic degeneration or surgical removal of the ovaries frequently causes amenorrhœa; and it must never be forgotten in the eliminative diagnosis that amenorrhœa, whether primary or secondary, may be due to pregnancy, the existence of which it is hoped to conceal or of which the young woman may be unsuspiciously ignorant.

The establishment of the menstrual function is not infrequently delayed beyond the usual age without obvious cause, and sometimes the flow begins at the age of ten or eleven: these variations need give rise to no concern in the absence of ascertainable pathological conditions.

II. Dysmenorrhœa.

In the great majority of cases of this distressing symptom in adolescent womanhood the cause is to be found in the unstable conditions of the nervous system. There is often present a congenital anteflexion and imperfect development of the cervix uteri, with perhaps a contracted lumen of the canal and extreme hyperæsthesia of the genital tract and especially at the seat of flexion, the internal os. General disorders, — rheumatism, anæmia, nerve weakness, and hysteria are often present, and these conditions are liable to increase, during menstruation, what Goodell so well characterized as the " intangible, imponderable, invisible pelvic pains " of neurotic women. There may be a sodden, thickened condition of the endometrium from imperfect drainage; and exfoliative endometritis, causing the so-called membranous dysmenorrhœa, is occasionally observed in virgins (the passage of the membrane sometimes exciting suspicions of early abortion or tubal pregnancy). Sclerosis of the ovary is a recognized cause of menstrual, as well as intermenstrual, pain; and congenital or acquired retro-flexions or versions of the uterus, especially if associated with undue pelvic congestion, are well-known causes of dysmenorrhœa.

2. Malformations and Displacements

The several types of genital malformations likely to be discovered at puberty, owing to the apparent non-establishment of normal menstrual function, are the so-called gynatresias, — imperforate hymen, vagina or uterine ora. Absence of the vagina may be discovered at this time, likewise absence or defective development of the uterus and appendages. Displacements of the uterus, sometimes observed in young virgins as a result of neoplasms or other mechanical causes, are not to be classed as malformations; but congenital forward flexion of cervix, corpus, or both, are certainly malformations, and are often associated with undeveloped cervix and ovaries.

3. Infections

Whether from assault or acquiescent venery young adolescents are liable to gonococcus infection, involving possibly only the urethral or vulvo-vaginal glands, generally with abscess formation; or the infection may pass the vagina and uterine ora and reach the uterine appendages, and peritoneum. Vulvo-vaginal abscess may also occur from the non-venereal invasion of other pyogenic organisms. Syphilitic primary lesions and chancroidal infections must be differentiated; and occasionally the so-called, but not necessarily, venereal warts present symptoms which demand relief. Eczema and the other pruritus do not, as a rule, present themselves at this period. Descending tubercular infection of the internal genitalia or primary tuberculosis of the external genitals is occasionally observed.

4. Traumata

The virgin adolescent may suffer any of the traumata of childhood, — from blows, falls, impalement. Venturesome young women may be hooked by cattle. As more capable of penetration they are liable to more serious injury from rape, with laceration and hæmorrhage.

5. Neoplasms

Aside from the ovarian neoplasms occasionally observed in girls and young women, the period of adolescence is for the most part exempt from new growths. Myomata, if they exist, seldom give symptoms, and malignant growths are of very rare occurrence. Vaginal cysts are rarely discovered at this time; but cysts of the vulvo-vaginal glands may cause discomfort and excite discovery. Thyroid enlargement, sometimes observed at puberty, generally subsides with the establishment of the menstrual function. A fairly frequent neoplasm observed at this period is the angioma urethræ, or urethral caruncle, which often causes symptoms demanding relief.

The following cases will illustrate some of the above outlined affections of the adolescent period: But before entering upon their consideration the inexperienced gynæcologist will do well to ponder certain fundamental principles in the pelvic examination of girls and young women. He should realize that vaginal examination is liable to be a great shock to a young woman's modesty; that it should be avoided, if possible; that a rectal examination will in some cases serve as well; that if a vaginal examination is really essential, it should be made with great gentleness, always in the presence of a nurse or of the patient's mother or other female relative; that great care should be taken not to rupture the hymen; that sometimes local anæsthesia is desirable, and sometimes general anæsthesia necessary. If a speculum examination must be made, the smallest size of the Sims speculum is the most suitable: this, if well lubricated and introduced slowly, may generally be used without causing pain and without rupturing the hymen. Indeed, with this speculum, minor operations, such as cervical dilatation and curettage, may be done without rupturing the hymen, the patient of course being under general anæsthesia. In the vaginal examination of the unanæsthetized virgin diversion of the young woman's mind with conversation on some subject in which she may be interested will often facilitate the painless introduction of one finger. Finally, the gynæcologist's work should be done with clean hands and a pure heart.

CASE IX

A Russian girl of twenty-three asks advice because she has never menstruated. Since a year before, she has been growing very fat; but except for occasional headaches her general health is excellent, and she sees no reason why she is not as other young women are.

Diagnosis. — The very plump and comely young woman shows no anomaly except the following: there are no breasts and no nipples; in place of the cervix there is only a small nodule; perhaps because of the fat abdominal wall no sign of a uterus or its appendages could be made out.

Treatment. — There was no medical or surgical expedient known to the consultant which offered any hope of successful application, and the unfortunate young woman was so informed. It was suggested that she might reduce her fat under suitable diet and exercise; but no treatment could be offered for the imperfections of development.

Comment. — Such cases, in varying degrees of developmental failure, are not infrequent; the writer has come to dread them, they are so hopeless. Ovarian and corpus luteum extracts have been tried without avail. If, as alleged, failure of genital development combined with youthful obesity is due to hypopituitarism, some hope may be based on the use of pituitary extract; but this field of research yet remains to be tilled assiduously.

CASE X

A school-girl of fifteen was brought by her mother for the relief of dysmenorrhœa, with which she had suffered since puberty a year before. The pain began the day before the flow appeared and lasted for three days, generally confining her to her bed or room, and interfering with her school duties. The girl was in good general health, was being most carefully and sensibly reared by her mother, and there was no apparent reason for the menstrual pain.

Diagnosis and Treatment. — It was explained to the mother that without a pelvic exploration it would be impossible to judge of the condition of the internal genitalia, but that it would be best not then to subject the young woman to a vaginal, or even rectal, examination. It was suggested that a harmless drug treatment might be tried at a venture, and that if this failed it would be time to consider a more searching examination. This advice was received with satisfaction. The prescription was for fluid extract of viburnum, with direction to take half a dram three times a day for five days, beginning two days before the period was due and continuing through the first three days of the flow, or until the pain was arrested.

Result. — The young lady did not come again, and it was feared that the empiric attempt to relieve her menstrual pain had failed. But two or three years later she called to make some inquiry in regard to her mother's health, and was questioned as to her own welfare. "Oh!" she said, "the medicine relieves my pain entirely and I do not have to stay out of school. I have given the prescription to lots of my girl friends, and they think it is splendid!"

Comment. — Opinion may be divided as to the wisdom of such empiric prescription; but in the absence of all reason to suspect the pelvic organs it was thought likely that the menstrual pain was a neurosis, and such it evidently proved to be. At all events, it should be remembered that vaginal examination is a sore trial for a young girl, and should not be made except under urgent indications, and even then generally not at a first visit.

CASE XI

A fourteen year old school-girl, who began to menstruate at the age of eleven and a half years, sought advice on account of poor general health and occasional dysmenorrhœa. Appetite was poor, the bowels constipated, and she did not sleep well.

Diagnosis, Treatment, and Result. — Nothing wrong was found in the pelvis; but the girl was anæmic and neurasthenic, and was of a highly emotional nature. It seemed clear that the menstrual pain was to be attributed to these conditions. Advice was given as to habits of study, exercise, and general hygiene; the bowels were regulated; Blaud's pills and a bitter tonic were prescribed: viburnum was also advised, to be taken in the way directed in the last preceding case. Some five weeks later the young girl reported herself in improved general condition, but with no relief of the menstrual pain; continued general treatment was advised.

The patient did not appear again until after more than two years, when she reported that although her general health had improved the menstrual pain had become worse, was often attended with vomiting, and sometimes required subcutaneous morphia from her local physician. Pelvic examination at this time disclosed a retroverted, retroflexed, and somewhat prolapsed uterus, for the relief of which the patient entered a private hospital some months later, after finishing her school-days. Curettage showed a marked endometrial hyperplasia. It had been planned to open the abdomen to replace and suspend the uterus; but it was found that under ether it was possible to place the uterus bimanually, and it seemed a pity to open the abdomen of a girl of seventeen before treatment with pessary had been tried: an Emmett's pessary was therefore fitted to hold the replaced uterus in position. Two months after returning home the patient reported that she had no pain or vomiting, and the uterus was found in normal position; the pessary was comfortably worn and was kept clean with daily vaginal irrigation. A year after curettage and uterine replacement the patient reported herself in excellent health.

A year later, when she had worn her pessary for two years, it seemed expedient to remove it on trial, in the hope that the uterus would now be held by its normal supports. A few days later it was found, however, that the uterus had again retroverted and retroflexed, and the pessary was re-inserted after the uterus was replaced bimanually. Again fifteen months later the pessary was removed on trial; but the uterus failed to remain in normal position without it, and the pessary was again replaced. Twenty months later, at the age of twenty-two, the young woman married, and seven months later she was evidently pregnant.

Comment. — It is perhaps needless to say that the successful use of pessaries cannot be learned from books; like other forms of surgical technique the application of pessaries must be taught clinically. In the first place the pessary must be well fitted and adjusted, so well indeed that the patient is not conscious of its presence. It must not be used in a vagina that is inflamed and tender; in such cases all soreness must first be relieved by douches and vaginal medication: in some cases, however, a soft rubber lever pessary can be used when a hard rubber pessary is not at first well borne. If the woman is married, it is well to tell her that the pessary should in no way interfere with coitus, and that if it does, she should make the fact known to her physician: occasionally the husband needs some advice and instruction. Once the pessary has been fitted the patient should be seen in two or three days, and again in a week or two, in order that it may clearly be ascertained by touch and sight that the pessary is doing its work without causing abrasions of the vaginal mucosa: it is also well to instruct the woman how to remove the pessary, if by chance it should cause discomfort.

There seems to be a difference of opinion in regard to the frequency with which pessaries need to be removed for cleaning. Women have been known to be unwilling to wear pessaries because they have been told by their physician that the instrument should be cleansed every month; and they naturally demur at a method which ties them to such frequent medical aid, and interferes with absence from home or travel abroad. Experience has taught the writer that if

a woman as a part of her toilet will take a proper daily vaginal irrigation, she may go for from three to six months without having her hard-rubber pessary removed for cleansing: soft-rubber pessaries do not keep clean as long; but they are intended only for temporary use. Neither is it true that well-fitted pessaries cause a vaginal leucorrhœa in cleanly women. It is true that a hard rubber pessary long worn will lose its lustre, and should be repolished after several years by the instrument maker, or an identical new one substituted.

When a woman wearing a pessary marries, it is generally wise and kind to remove the instrument, to avoid any remotely possible unpleasantness of the honeymoon: thereafter the pessary should be replaced, and the husband, if necessary, instructed. Women have also been informed that they cannot become pregnant while wearing a pessary, which is far from the truth. When pregnancy does ensue, the case should be seen occasionally, and the pessary finally removed when the uterus has become an abdominal organ.

Case XII

A twenty-one year old sister of the last preceding case sought relief from dysmenorrhœa of a year's standing. For six years she had menstruated without pain; but for a year pain had begun three hours after the flow had started and lasted for a day: there was no clotting. She felt run down and had a poor appetite.

Diagnosis. — Physical examination revealed nothing but a somewhat exaggerated anteflexion of the corpus uteri; but in the absence of clotting it did not seem that this could be the cause of the menstrual pain; besides, the moderate hyper-flexion was probably congenital, and the pain was only of a year's standing. It seemed more likely that the pain was due to the general condition of anæmia in a neurotic girl.

Treatment. — The prescriptions were, — a tablet of iron, arsenic, and strychnia, a bitter tonic combined with a ten-grain dose of bromide of sodium, and viburnum to be taken as before described.

Result. — Under the advised treatment the dysmenorrhœa entirely disappeared, and the young woman was well for two years, when she again became nervous and debilitated, and painful menstruation returned: the same treatment was employed, with a similar result. Nine months later she was married, and in a year and a half she became pregnant.

Comment. — A large proportion of the cases of dysmenorrhœa in young adolescents are due to anæmia, neurasthenia, and general disorders. If a gynæcologist expects to deal successfully with such cases, he should be a good internist as well.

CASE XIII

A twenty-one year old college graduate seeks advice on account of dysmenorrhœa with which she had been afflicted ever since puberty. She had tried all sorts and kinds of medicines except morphia, and she had been dilated and curetted, all to no lasting effect. Aside from this menstrual pain she is in excellent health.

Diagnosis and Treatment. — Pelvic examination disclosed a retroverted and retroflexed uterus, prolapse of the left ovary, and moderate enlargement of the right ovary. Treatment with pessary was considered; but this is always difficult when the uterus is retroflexed, and not always successful; moreover, one ovary was probably cystic, and it seemed best to open the abdomen. Before doing this the uterus was dilated and curetted, and as expected the endometrium was much thickened from the disturbed circulation of the long displaced uterus. The right ovary was found to be of twice its normal size, with numerous cysts, and was resected. The prolapsed left ovary was easily brought up on replacing the non-adherent uterus, and was seen to contain multiple small cysts, although not much enlarged: the cysts were pricked and the ovary left *in situ*. The uterus was then suspended to the abdominal wall, care being taken to attach the uterus sufficiently high to leave room for a full bladder, and to allow the womb gradually to sink sufficiently to draw out a suspensory ligament of peritoneum containing two or three muscular fibers. The abdomen was closed in layers, with the fascia of one side lapped over that of the other. The convalescence was uneventful.

Result. — The next following period was entirely without pain, and two months later the uterus was found in normal position and the abdominal scar linear: the ovaries were not prolapsed. Five months after operation the young woman reported that she was in excellent health and that her periods were quite normal.

Comment. — Had this young woman had only a displaced uterus to account for her dysmenorrhœa, the abdomen would not have been opened until curettage and uterine replace-

ment and pessary support had been given a fair trial for the relief of symptoms. There was reason to think, however, that the condition of her ovaries played a part in the obstinate dysmenorrhœa, and laparotomy seemed entirely justifiable. It is, of course, an obstetrical crime to fix the uterus before the menopause; but it is one thing to fix the uterus and another to suspend it. Ventral fixation may result in a chapter of accidents, from early miscarriage to rupture of the uterus, unless the latter is forestalled by a timely Cæsarean section; but the writer has never seen an obstetrical mischance after properly performed ventral suspension.

CASE XIV

A well-educated young woman of twenty-four years seeks advice because for a year or two she has flowed too much and too long; she has a good deal of backache and menstrual pain, and is obstinately constipated. Aside from general want of strength, there is no other complaint.

Diagnosis. — Physical examination, aside from weak pulse, showed nothing abnormal except that the uterus "sagged" and was slightly retroverted. It was learned on inquiry that the maiden was carrying a filial anxiety, and furthermore that she was engaged to a young man whose attentions were quite constant: these facts seemed to explain some of the symptoms. She was advised to enter a private hospital for observation and treatment: even here the attentions of the fiancé were assiduous.

Treatment and Result. — Under ether anæsthesia the uterus was dilated, curetted, and easily replaced: a perforated glass stem-pessary was placed in the uterus, and a retroversion lever pessary was fitted. Observation confirmed the previously formed opinion that the excessive menstrual flow and much of the general physical weakness were largely due to pelvic congestion and prolonged courtship: marriage was advised as soon as the young woman had convalesced.

The next following period lasted only five days, and the uterus was well held by the pessary. The next two periods lasted six days; but the flow was less profuse: all the while the patient was taking bi-daily hot-water vaginal douches. She was gaining in weight and improving in general condition: tonics of iron, arsenic, and strychnia were continued. Eight months after she came under observation this young woman was married and moved to a distant home. Two months later she wrote that she had been unusually well, but that she had missed her last period and was having morning nausea: the probable explanation seemed fairly obvious, and she was referred to a local obstetrician.

Comment. — The old-time matron held a pronounced opinion that long engagements are not good for affianced brides. The matron may have had other than socially

prudential reasons for her opinion. At all events, there is no reason to doubt that when once the troth is plighted, it is best that wedlock should soon follow. There can be no question that the natural sexual desire consequent on the intimate association of engaged couples, if long unsatisfied, will result in chronic pelvic congestion and its sequels, — uterine engorgement, menorrhagia, displacements, backache, pelvic pain, and general deterioration of health. The old-time matron was undoubtedly right, possibly without knowing the whole reason for her opinion.

The value of the hot-water vaginal douche for the relief of pelvic congestion is unquestionable; but to be of value, indeed if not to be injurious, the douche must be taken understandingly. Repeatedly, when the douche has been prescribed for purposes of depletion, the patient has replied, "Ah! but I have taken douches for a long time without benefit". It may be said with regret, but truly, that many trained nurses do not understand how to give vaginal douches correctly, even in some good private hospitals. It is not, therefore, enough to prescribe a vaginal douche; it is necessary carefully to instruct a woman how it should be given to accomplish the desired result. In the first place the douche should be sufficiently long to accomplish its object. The first effect of a hot douche is to produce or increase congestion; if therefore the object is to bring more blood to the parts, as in the treatment of some cases of amenorrhœa or scanty menstruation, a quart of hot water may produce the desired result. But if the object is to deplete the pelvis and reduce congestion, the douche must be long enough to contract the vessels and thus diminish the blood supply. Women can be made to understand this by reminding them of the common experience of the laundress: when she first puts her hands into hot water, they become red and swollen; but after longer immersion, they look pale and wrinkled. As a rule from four to six quarts of hot water are necessary satisfactorily to diminish the pelvic blood supply and reduce passive venous congestion, and to take this amount should consume at least twenty minutes. It will take this long for a six-quart reservoir to empty itself, if it is not placed too

high above the pelvis. Many women suspend their fountain syringe from a gas fixture or high bedpost, and the reservoir soon empties itself; instruction should therefore be given that it should be hung only high enough to give sufficient head for a slowly running stream, not more than a foot higher than the pelvis.

In the second place, the patient should take her douche in recumbent posture with the pelvis raised, on a suitable douche pan, if possible, otherwise on an extemporized Kelly pad, or pillow and rubber sheeting, arranged to conduct the water to a receptacle below. It is time wasted for a woman to attempt a depleting douche sitting on a water-closet. Taken in this way the vagina is not distended, and the water does not reach the uterus, appendages, and pelvic vessels at all. Whereas in recumbent posture with pelvis raised, the distended vagina is kept filled with water during the whole time: when the vulva is stretched, torn, or gaping, the patient, with the hand that holds the douche nozzle, can alternately close and open the vulva by compressing and relaxing the labia majora. A woman may not be comfortable lying on a douche pan without a small pillow placed under the hollow of her back and a suitable support to raise her feet a little higher than her pelvis.

In the third place, for purposes of depletion the douche water must be hot; many prescribed hot douches are barely tepid when given, and tepid water has only a cleansing effect. At first a woman may be able to bear in the vagina a heat of only 108° or 110° F.; but she will soon become accustomed to higher temperatures up to 115°, which is sufficiently hot to accomplish the desired purpose: some women raise the temperature to 120° F. without ill effect.

The hot-water vaginal douche, properly given, and especially when used in conjunction with wool tampons charged with glycerine or ichthyol and glycerine, 25 per cent, is a most valuable therapeutic agent, not only for reducing pelvic congestion, but for promoting a normal pelvic circulation: used for this purpose it is a great help in the treatment of subacute and chronic pelvic inflammation, and promotes the absorption of chronic exudates. It might be inquired

why an ice-cold douche might not better meet these indications, from the successful, analogous use of the ice-bag on the breast or abdomen. Actresses, circus performers, and courtesans have been known to use the cold douche to check or suppress the menstrual flow; but in general women would find the cold douche too uncomfortable in the vagina, notwithstanding the grateful effect of the ice-bag in undue engorgement of the breast and in the acute stage of pelvic inflammations.

CASE XV

A normal-school girl nineteen years old, otherwise well, complains of dysmenorrhœa dating from puberty. The periods are fairly regular, although sometimes several days overdue, and the flow, when once established, lasts three days; but the amount is rather scanty. The pain begins before the flow appears, and gradually increases, becoming cramp-like, until after a varying time some small clots are expelled; there are often nausea and vomiting. Meanwhile she has taken a hot footbath, gone to bed, taken hot ginger tea and sometimes hot gin and water, and has placed a hot-water bottle over the hypogastrium. After passage of clots for several hours the cramp-like pains subside into a dull, pelvic ache, which lasts during the remaining days of the flow. It takes several days afterwards before she recovers her strength and is able to resume her studies.

Diagnosis. — As suspected from the above history, the uterus is found to be acutely anteflexed, both corpus and cervix; the cervix is long and conical, the external os is abnormally small: the ovaries are not palpable without anæsthesia. The case seemed clearly one of congenital origin, with a strong surmise of ovarian insufficiency.

Treatment and Result. — About a week before the next period was due, under ether anæsthesia the cervical canal was dilated with Hanks' graduated dilators followed with the glove-stretcher instrument: dilatation was difficult, owing to the undeveloped condition of the cervix, but was finally accomplished, and the uterus was curetted. A hollow, glass, stem-pessary, $\frac{8}{16}$ of an inch in diameter, a little shorter than the depth of the uterus, was then inserted, was held in place by the natural grip of the cervix, but was further supported by a vaginal gauze dressing, subsequently renewed every other day. The glass plug was left in the uterine canal for ten days, when the flow appeared, and for the first time in her life the young woman menstruated without pain: she went home when the period was over. When last heard from, six months later, the patient stated that her periods were still painless except for vague ovarian

aches which did not compel her to give up her school work.

Comment. — As a rule the above treatment does not give permanent results, but is preferred by many women to any form of cutting operation. The period of immunity from pain lasts for from one to three years, and after that is reasonably sure to return. The best hope of permanent relief lies in marriage and childbirth. If the woman has normal sexual feeling, she may be fortunate enough under coverture to have the uterus attain a more normal development; and if she is able to become pregnant, childbirth will permanently dilate and straighten the uterine canal. The trouble is, however, that such women often have undeveloped ovaries, which rarely, if ever, produce ova; so that no assurance can ever be given in such cases either that dysmenorrhœa can be permanently relieved or sterility overcome.

CASE XVI

A professional friend referred the following case: She was fourteen years and five months of age, was well developed, well nourished, and in excellent general health; she attended school regularly, took long walks, was fond of dancing and of the out-door sports of healthy young girls. Neither she nor her watchful mother had seen any symptoms of the menstrual molimina; but for three months there had been a noticeable enlargement of the abdomen. For a week there had been a frequent desire to pass the urine; but there had been no disturbance of defæcation, no bearing down, no pelvic distress, in fact no discomfort whatever. Advice was sought, however, on account of the gradually increasing tumor in the lower abdomen and the non-appearance of the menstrual flow.

Diagnosis. — The family physician had found an abdominal tumor, reaching nearly to the umbilicus, but narrow, and not extending into the iliac regions; the hymen he found to be imperforate.

When the writer saw the case he was unable to determine positively whether he had to deal with a distended vagina simply, or whether the uterus and possibly the Fallopian tubes were involved; but the absence of distressing symptoms and the probability that the girl had passed but a few months beyond the age of puberty led him to believe that probably the retained menstrual blood was limited to the vagina.

Treatment and Result. — The hymen was found to be bulging convexly outward: this was punctured with a small trocar, and a dark-brown fluid escaped. The discharge was not of tarry consistency, as usually described in the books, owing, presumably, to the fact that it had not been retained sufficiently long for the blood serum to be absorbed to any great extent. After the abdominal tumor had somewhat subsided, the opening in the hymen was enlarged by multiple incisions, and the vagina was thus thoroughly evacuated. The vagina was then washed out with a weak carbolic solution and explored with an aseptic finger: the uterus was

found of normal size and the os non-patulous; the tubes could not be felt: it was clear, therefore, that the case was one of hæmatocolpos simply. The vagina was enormously distended and seemed to fill the whole pelvis.

The evacuated fluid was carefully collected and was found to measure three and a half pints. Assuming that there had been no marked absorption of the serous constituent, and accepting the common statement that the normal average amount of each menstrual flow is about six ounces, we may infer that the fluid evacuated represented approximately nine monthly periods, and that the girl began her menstrual life at the age of thirteen years and eight months.

After operation the patient was kept in bed for five days, and the vagina was carefully syringed with carbolized water. There was no febrile reaction and no evidence of sepsis. Twenty days after the operation a normal, painless, and free menstruation took place, lasting six days. Three days thereafter, the vagina was found to have contracted a good deal, but was still quite capacious: the vaginal walls were now more or less thrown into folds, and gave off a thin, glairy secretion; the uterus was normal in size and position.

Comment. — These cases of congenital hymeneal atresia are rare. Carl Braun observed only four cases in his extensive experience, and Lombe Atthill, Master of the Dublin Rotunda, only one. Among careful, intelligent people the anomaly should be recognized early; and when thus recognized, and aseptically treated, the results should be good. In neglected cases, however, the uterus and Fallopian tubes may become distended, blood may thus escape into the peritoneum, and fatal results ensue. In these cases, too, of hæmatometra and hæmatosalpinx, there is danger of rupture of the tube either by over-distention or by the force of a rapidly contracting uterus after the hymen is incised. To avoid this latter danger it is prudent to make at first only a small opening in the hymen, thus allowing the fluid to escape very slowly, and also to avoid all pressure over the uterus, either by the hand or by the abdominal bandage which has sometimes been advised. The greatest danger in all cases of menstrual retention from hymeneal atresia, and the one

most fatal in former days, can now most happily be averted by rigid surgical asepsis.

It is probable that in earlier times these cases of menstrual retention were sometimes overlooked and the patient treated with iron and the various emmenagogues until distressing symptoms demanded a physical examination. Sometimes the hymen has ruptured spontaneously, and a natural cure thus resulted. The case is reported of a girl of sixteen who had never menstruated, and who had had monthly attacks of spasmodic pains in the lower part of the abdomen, irritation of the bladder, and a constant feeling of bearing down, associated with abdominal enlargement. During an attempt at vaginal examination the hymen was ruptured, a large amount of retained menstrual flow gushed out, and recovery followed.

CASE XVII

A scrawny school-girl of seventeen, rather tall of her age, with muddy complexion, came to the hospital on account of an abdominal tumor, first noticed six months previously, and slowly increasing in size. She stated that she had never menstruated, that she suffered from progressive obstinate constipation, but that her physical health was otherwise normal. Further questioning, however, elicited the information that each month since she was thirteen she had experienced for a period of several days sensations of malaise, with lassitude, headache, backache, and bearing down pains in the pelvis. With several of these attacks she had had severe epistaxis.

Diagnosis. — Physical examination showed a piriform median abdominal tumor, smooth and not tender, rising two-thirds of the distance from the symphysis pubis to the umbilicus. The hymen was imperforate, felt thick and fleshy, and bulged tensely outward. By rectum the region of the vagina was occupied by a doughy inelastic mass, apparently continuous above with the abdominal tumor already described.

Treatment. — Under primary ether anæsthesia a one-inch median, linear incision was made through the hymen. Exploration showed the vagina filled with lamellated dark blood-clot, much of which was easily evacuated with the finger. The cervix felt soft, but otherwise normal. The uterus was not explored, but was found to be enlarged and to constitute the mass felt by abdomen.

The patient was given copious hot, sterile water, douches, twice a day, and small doses of ergot by mouth for a fortnight. The douches were returned stained dark red and containing fragments of clot, and the patient had occasional cramp-like pains accompanied by uterine contractions. At the end of this time examination showed the hymen healed, with an introitus easily admitting one finger, and the uterus reduced nearly to normal size. One week later the patient had her first normal catamenia, the flow being rather profuse, and containing a large amount of dark clot. Since that

time she has menstruated regularly and normally, and her constipation is entirely relieved.

Comment. — It seems inconceivable that a mother should allow her daughter's persisting amenorrhœa to go so long neglected, or that the patient should not have discovered her abnormality and have sought surgical aid, if only on account of the increasing tumor of her hæmatometra. Her monthly symptoms undoubtedly represented menstrual molimina, and the occasional nose-bleeds a vicarious relief of the associated venous congestion. Apparently the pressure of the increasing hæmatocolpos and hæmatometra was a factor in her habitual constipation. It is rather surprising that there was no disturbance of micturition.

CASE XVIII

An unmarried woman of twenty-four sought advice because she had never menstruated. Her health was otherwise normal, and she had never experienced periodic pain or other moliminal phenomena.

Diagnosis. — Examination showed the vulva normal; but there was no vaginal orifice. The region where the hymen should have been was smooth, soft, and slightly concave. Rectal examination showed a small nodule high in the pelvis, evidently a rudimentary uterus about the size of a walnut. No ovaries could be felt. Her condition was explained to the patient, and she was told that an artificial vagina could be constructed, but that the rudimentary condition of the uterus would undoubtedly preclude pregnancy, should she become married. She, however, declined operation and since there was no evidence of retained menstrual blood, there seemed no reason to urge it.

Comment. — It seems impossible that this patient should not have been aware of her abnormality. Probably she consulted a surgeon to ascertain what would be her prospect of maternity in the event of operation and marriage.

CASE XIX

A single girl of seventeen years seeks advice on account of a congenital malformation of the genitalia, whereby all the fæces are passed through the vagina. The catamenia began at fifteen, and have been regular and painless. There is no other relevant history.

Diagnosis. — Physical examination showed no abnormality except of the genitalia. An inch above the fourchette there was a fistula, admitting the tips of two fingers, in the recto-vaginal septum; the anus was imperforate, the rectum ending in a cul-de-sac just under the skin.

Treatment. — At the first operation an incision was made at the site of the anus and easily carried through into the rectal pouch: an active sphincter was found to be present. The mucosa of the bowel was brought down and sutured to the skin with interrupted catgut stitches; a plug of gauze smeared with boric ointment was placed in the lumen. As soon as the wound was sufficiently healed to permit it, this new anus was dilated daily with rectal bougies until three weeks after the first operation, when attempt to close the recto-vaginal fistula was made in the usual manner. This operation succeeded in reducing the fistula to about one-quarter of an inch in diameter: meanwhile nearly all the fæces were passing through the anus. Three subsequent attempts were made to close the small fistula, the last being three months after the first; the third was successful, and the young woman was discharged with instructions to pass rectal bougies on herself regularly to keep the anus sufficiently open.

Result. — About five months after first coming under observation, the patient reported in excellent condition: the anus was of normal size, with a good sphincter; the perineal body was small, but solid; the recto-vaginal septum thin, but intact; fæces passed entirely *per anum*.

Comment. — Recto-vaginal fistula may occur as a congenital malformation resulting from partial or complete persistence of the embryonic cloaca. The fistulous opening may be of all degrees of size, ranging from a pin-hole to one that

will admit several fingers. The larger openings are usually associated with imperforate anus. It is seldom judicious to operate on such cases during infancy or childhood, since there is no intestinal obstruction, and the parts are too small and the difficulty of keeping them clean is too great to make satisfactory operation probable, or a good result likely. Moreover, when the anus is perforate and the fistula small, systematic dilatation of the sphincter may lead to reduction in the size of the fistula or even to its complete closure. If, however, the fistula persists, its surgical closure properly may be undertaken after puberty, during early adolescence, and before nubility. When the fistula is associated with imperforate anus, the latter must first be remedied, and the fistula later dealt with by the usual technique.

CASE XX

A factory girl of nineteen years comes to the hospital for a "swelling of her privates", which has troubled her and been gradually getting worse for a week. It hurts her to walk, and pain keeps her awake: she says there is some yellowish vaginal discharge. Inquiries bring out the acknowledgment that three weeks earlier she had suffered with frequent and painful micturition, but that these troubles had got better after taking some medicine given her by a young man friend. The girl seemed to be otherwise well.

Diagnosis. — There was slight redness about the meatus, and a drop of pus was expressed from the urethra: the smear subsequently gave the diplococcus of Neisser. There were a few tiny red spots in the vestibule near the meatus. Just outside the torn and stretched hymen, towards the lower right side of the vaginal introitus, was a reddened spot marking the opening of the duct of the vulvo-vaginal gland on that side. The lower part of the right labium majus was the seat of a red, glistening, tender swelling, the size of a small egg, which gave a sense of fluctuation, although the duct was so obstructed that no pus could be expressed. The girl's temperature was 100.5° F. It was clear that the swelling was an abscess of Bartholin's gland, since it was easy from the pain, heat and redness, as well as by the history, to rule out vulvo-vaginal retention cyst, labial hernia, and neoplasms.

Treatment and Result. — A poultice was applied to relieve pain until the next morning's clinic, when under anæsthesia the abscess cavity was freely laid open, cleansed with peroxide of hydrogen, curetted, and packed with a sterile gauze wick to prevent too early closure. After three days the girl was discharged to the out-patient clinic, where the wound was kept cleaned, drained, and wicked until it had closed by granulation.

Comment. — Promptly successful treatment of these abscesses demands a generous incision: the so-called "medical opening", like the small opening of spontaneous rupture, does not permit satisfactory drainage and is likely to close too soon. It is a fine point of cosmetic surgery to make the incision through the mucous surface and thus leave no visible scar.

CASE XXI

A comely young nursery maid of twenty years avers that she is engaged to be married, but that before marrying she would like to be cured of a water trouble. Her bladder had troubled her for three years, being the seat of a dull pain and uncomfortable feeling, and she has to pass her urine frequently, arising several times in the night for the purpose; passing water is also somewhat painful, and there are occasional yellow spots on her underclothing. On searching inquiry she finally admitted that she had been " keeping company with her young man " for over three years, and that in their early companionship she had occasionally permitted undue liberties; but after a time when a discharge came on and it hurt her to go with him she had resisted his advances. Except for this water trouble, she is quite well, as far as she knows.

Diagnosis. — Inspection of the vulva disclosed the usual stigmata of gonorrhœal infection, — a reddened spot at the opening of the duct of the left vulvo-vaginal gland, reddened crypt openings in the lower part of the vestibule, and redness about the swollen urethral meatus, which pouted outward. Bartholin's gland on the left was swollen, but not red or tender; no pus could be expressed from it: evidently the duct was occluded, the gland had not become infected, and the swelling was a retention cyst. On eversion of the meatus it was possible to see the opening of Skene's glands, or urethral diverticula. From the less swollen gland a drop of pus was expressed; on the other side the duct was occluded. Palpation of the base of the bladder through the stretched hymen showed considerable tenderness: urinalysis indicated a chronic cystitis. Diagnosis seemed sufficiently clear without the aid of bacteriology; but examination of the drop of pus from Skene's gland left no doubt by the finding of Neisser's organism. Perhaps pardonable curiosity led to inquiry as to whether either of the two little girls in her charge had ever had sore eyes or any inflammation about the genitals; but the nurse girl replied that she washed her own towels, sheets, and personal linen, and never let the little girls touch them;

further that she always washed her hands carefully before she bathed and dressed her charges, and never used the same water-closet they did, — this, possibly, as a result of medical publicity.

Treatment and Result. — When the ducts are open the infection can sometimes be treated successfully by the injection, under cocain, of 25 per cent argyrol through the blunted needle of a hypodermic syringe; but it is a long, slow process. In this case one duct was closed and there was a small abscess behind it; moreover, there was the cyst of Bartholin's gland to be dealt with, so the girl was taken into hospital. The ducts were laid open, cleansed with peroxide of hydrogen, and disinfected with strong tincture of iodine. At the same time the left Bartholin cystic gland was dissected out, and the bed closed in with catgut sutures. The young woman was kept in hospital for ten days, during which time her bladder symptoms ameliorated under the use of forced water diuresis and the exhibition of hexamethylenamin. She was kept under observation for six weeks, at the end of which time all redness and swelling had disappeared from the meatus and vaginal introitus, and the bladder seemed free from infection. She was told that no assurance could be given that she was free from organisms; but considering the source of her original infection, and the fact that the young man had been under conscientious treatment, it seemed fair to acquiesce in the plans of the couple. At all events it seemed better that the girl should marry her lover then, under the circumstances, than to marry some other man later.

Comment. — If the gonococcus infects these diverticula of Skene, or indeed the ducts of Bartholin's glands, it may linger indefinitely, and give rise to a persistently infective discharge. The only hope of successful treatment lies in free incision and vigorous disinfection; and even when apparently exterminated the organism may be only dormant, and is likely to be roused to infective activity by the pelvic congestions of coitus, pregnancy, abortion, or childbirth.

Case XXII

A modest, unmarried, cleanly, apparently healthy young woman of twenty-four years presents herself complaining only of a painful swelling of one of the genital labia, which has been troubling her for several days; a carefully taken history evoked nothing else to arrest attention.

Diagnosis. — General physical examination disclosed no abnormality. The hymen was found to be intact and would not admit a finger. Rectal examination showed the uterus to be of normal size and position, and freely movable; the appendages were not felt. There was no vaginal discharge. The left labium majus presented a typical abscess of Bartholin's gland.

Treatment. — The abscess was opened and drained in the usual manner. Careful cultures from the half ounce of pus showed a profuse growth of staphylococcus pyogenes aureus: cultures on hydrocele agar showed no growth of gonococci.

Result. — The young woman was discharged two weeks later with the wound well healed.

Comment. — It is well known that the gonococcus is the chief exciting cause of vulvo-vaginal abscess; but it should be remembered that this prevalent organism is not the only exciting cause. Except for the absence in this case of the usual other stigmata of gonococcic vulvar infection, the clinical appearance was that of glandular infection by Neisser's organism. The case shows once more that appearances are often deceptive, and teaches the wisdom of suspending judgment in vulvo-vaginal infections until the results of bacteriological examination are known.

CASE XXIII

A girl of eighteen, a frank prostitute, came to the clinic complaining of sores about the genitalia of a week's duration. She also complained of pains in both groins.

Diagnosis. — Examination showed the external genitalia to be the seat of multiple shallow, ulcerative lesions, varying in size from a pin-head to a dime, with irregular outline, slightly undermined margin, and yielding a slight, thin, watery discharge. There was some œdema of the labia minora and about the clitoris, and the nodes in both groins were enlarged to the size of chestnuts and very tender. The ulcers were so sensitive to the touch that no further pelvic examination was made at this time. The lesion was obviously chancroidal in character, and a smear from the freshly scraped surface of one of the ulcers demonstrated the presence of the bacillus of Ducrey.

Treatment and Result. — The patient was directed to keep the parts clean, by bathing them frequently with sulphonaphthol solution 1 : 600, and to apply a dusting-powder of calomel and starch in equal amounts, after drying the parts with a very soft towel. She was advised also to remain as quiet as possible, lying in bed with the thighs separated, and to keep ice-bags constantly applied to the groins. The infective nature of the disease was explained to her; but it was superfluous to direct her to abstain from coitus.

Three days later many of the more superficial ulcers were already healing. Several deeper ones, however, were covered with a dirty, greenish slough and were becoming phagedenic in character; these were carefully cleaned and their bases touched with 95 per cent carbolic acid on a small cotton-swab applicator, and immediately thereafter with 50 per cent alcohol; the self-treatment was directed to be continued as before. The girl had disregarded the advice about the ice-bags: the nodes in the left groin were smaller and less tender; but those on the right were larger and becoming confluent. Four days later all the ulcerations were rapidly healing, and the nodes in the left groin had largely subsided. In the right groin, however, was a tense, red, shiny, fluctuant, exquisitely

tender mass, the size of a peach, — a typical bubo; the patient's face was flushed, her tongue dry and coated, and her temperature, previously normal, was 103.0° F. Under primary ether anæsthesia, the bubo was freely opened, by an incision parallel to Poupart's ligament, avoiding the dilated superficial epigastric vein. A large amount of foul, greenish pus was evacuated, and the abscess cavity was wiped out and tightly packed with iodoform gauze. On the third day thereafter the patient's temperature was normal and she felt as well as ever. The gauze pack was removed, and the cavity filled with glutol. (This is a 5 per cent solution of formalin in gelatine, allowed to solidify and ground to powder.) Four days later this glutol had entirely absorbed and the abscess cavity, much reduced in size, was clean, and healthily granulating. The ulcers were now well, and the wound in the groin closed in a short time.

Comment. — With willing and faithful coöperation on the part of the patient, chancroids may generally soon be cured and the formation of buboes avoided, if treatment is begun promptly. When buboes do occur they may most quickly be healed by the method above described. Without the use of glutol they are liable to remain open and discharging for a long time.

It should always be remembered that in such cases gonorrhœal and syphilitic infections are likely to coexist with chancroid. Gonorrhœa, if present or preëxistent, should be treated appropriately after the chancroid is cured. A primary syphilitic lesion may be uncertain or impossible of detection in the midst of multiple chancroidal ulcerations. A Wassermann test should therefore always be done in such cases, and if positive, anti-syphilitic treatment should be immediately instituted. In the case above described this test was negative. In another similar case it was positive, and the patient acknowledged an old syphilitic infection. In still another case it was positive, the patient refused treatment, and six weeks later a roseola and mucous patches appeared. In still a fourth case, the test was positive, three intravenous injections of neosalvarsan were given at ten day intervals, and no secondary lesions ever

appeared. The test, however, remained positive, mercury was administered intramuscularly and by mouth, and the case controlled by Wassermann and luetin tests until a cure was accomplished.

CASE XXIV

A waitress in a third-class restaurant, claiming to be single, and nineteen years of age, entered hospital on account of fever and great pain in both lower abdominal quadrants. She said she was pretty well, except for irregular and painful menstruation, up to a week before, but then after struggling with pain for two days she had been obliged to give up her work and take to her bed. A fellow lodger had given her a hot-water bottle, and a nearby physician had administered an injection of morphine one night: another physician later sent her to hospital. She was rather reticent on direct questioning, except for the facts above mentioned.

Diagnosis, Treatment and Clinical Course. — General physical examination disclosed nothing wrong except in the pelvis. There were a few red crypts about the meatus, the mouths of Bartholin's ducts were also reddened, the introitus readily admitted two fingers; there was only a slight vaginal discharge, but a half-inch scar was seen on the left labium majus. Later the girl acknowledged that she had had an abscess there two years before, which was incised in another hospital. Bimanual vaginal examination showed great tenderness in both lateral fornices, with evident mass. Smears from urethra and vagina were later found negative to Neisser; but notwithstanding, a diagnosis of probable acute gonococcic pelvic inflammation was reasonably made. The prescriptions were bed, ice-bag to hypogastrium, reasonable saline catharsis. Next day the white count was reported to be 19,000, showing a reasonably good resistance. The next six days showed a gradual decline of temperature to normal, gradual cessation of pain, and a nearly normal white count. Vaginal tenderness was so far diminished that ice-bags were given up, and bi-daily hot vaginal douches were ordered, alternating with wool tampons well charged with glycerine. A week later there was very little tenderness on vaginal palpation, and bilateral tubal masses were made out with no difficulty. The patient in a few days was allowed out of bed on trial: she was free from pain, and the temperature had been normal

for more than two weeks. Inasmuch as bilateral gonorrhœal salpingitis does sometimes get well without surgical removal of the tubes, or at least remains quiescent for a period of months or years, until injudicious instrumentation, unusual exertion, or other possible contributory cause fans the slumbering flame, it seemed fair to discharge the case relieved, with instructions to return should symptoms recur: besides, the young woman was very reluctant to accept operation when she was feeling so well.

About six months later the girl was sent in from the outpatient clinic with subacute exacerbation of her symptoms, — pelvic pain, irregular uterine bleeding, and a temperature of 101° F. It was found that there were tender bilateral tubo-ovarian masses as before, and the uterus was fixed with peritoneal adhesions in a position of second degree retroversion. Under the palliative treatment above mentioned there was an amelioration of all symptoms, and after a week of normal temperature the patient asked for her discharge. She was told that while then symptomatically well she would doubtless have exacerbations from time to time, and probably would never get well without operation. A year later she returned of her own accord on account of pretty constant pain in the lower abdomen, which interfered seriously with her work: she begged for operation, and after a week of rest in bed and general preparation this was carried out.

Operation. — The uterus was first curetted, and disinfected with tincture of iodine, and then with fresh gown and gloves the abdomen was opened. The pelvis was well roofed over with adherent omentum and intestine; these being separated and the general peritoneum walled off with hot moist gauze, it was possible to free the uterus and appendages from the pelvic peritoneum and lower bowel without rupture of a pus sac. The left tube and ovary were a hopeless imflammatory mass, and were removed. The outer two-thirds of the right tube was distended, and the fimbriated end closed; the ovary was not involved: this tube was resected, leaving about one and one-quarter inches, the free end being caught with a catgut stitch to the right ovary. The uterus was suspended, and the abdomen closed without drainage.

Result. — After two days' discomfort with gas pains the girl made a good convalescence, and on the eighteenth day went to the Convalescent Home. Six months later it was learned that she was in excellent health and the catamenia normal.

Comment. — Aside from the pain in these cases of gonorrhœal salpingitis, patients are a good deal distressed with frequent uterine bleeding, which is sometimes profuse, and family physicians are often tempted to curette the uterus for its relief: this is generally injudicious for two reasons. In the first place the bleeding is to be regarded as nature's effort to deplete the engorged pelvis; it will cease under treatment with rest, ice-bag, saline catharsis, and later hot douching and glycerine. In the second place, curettage is very likely to fan the slumbering embers of chronic pelvic inflammation, and the second state of the patient is worse than the first. If the curette is used at all in such cases, it should be just preliminary to opening the abdomen.

There are good reasons for postponing operation in most cases of gonorrhœal pelvic infection, especially in young unmarried women. In the first place, sometimes, although, it must be admitted, rarely, the infected tubes will get well, at least symptomatically. In the second place, after the amelioration of symptoms by preparatory treatment, most young women demur at operation, seeing no reason for it when they are feeling so well: it is wise, when possible, to avoid operation on an unwilling patient; it is better that she should request the aid of surgery when she fully realizes its necessity. In the third place, operative results are infinitely better after a course of palliative treatment and a week or ten days of normal temperature; then the tubal pus is either sterile or the organisms have lost their virulence, as in the "interval operation" for appendicitis. In the case above recorded the gonococci had perished; indeed no organisms were found in the tubal content. Besides, in most cases, the general peritoneum is speedily walled off in gonorrhœal pelvic infections. Of course acute cases must be closely watched, for very rarely to be sure, but once in a while, there are signs of beginning general peritonitis, when prompt and early operation may be advisable. Many physicians

unused to dealing with cases of gonorrhœal salpingitis, worry over the possibility of tubal rupture and therefore urge early operation. Yet in a long experience the writer has seen only two cases in which the pus-tube ruptured before the abdomen was opened: in one instance, thirty years ago, before laparotomy was a common and safe procedure, a tube ruptured in a case on medical service, and the young woman died; in the second case, a subacute tube was ruptured by the too assiduous bimanual palpation of a medical student, and the abdomen was promptly opened, the patient recovering.

CASE XXV

An unmarried girl of nineteen had her primary Neisser infection two years previously. For the past year she has had recurring attacks of pain in both lower abdominal quadrants, accompanied with profuse white vaginal discharge, and with profuse, too frequent, and painful menstruation; a severe acute attack brought her to the hospital.

Diagnosis. — She was a pale, tawny blonde, with face flushed, lips dry, and tongue coated. Thoracic viscera were normal. The abdomen was distended and tympanitic throughout, with spasm and tenderness in both lower quadrants, more marked on the right. Vaginal examination showed slight tenderness and resistance in the left vault, and in the right a bulging, elastic, exquisitely tender, fluctuant, ovoid mass, the size of an orange, reaching as high as McBurney's point. The temperature was 103° F., the pulse 145, the white count 15,600, hæmoglobin 70 per cent; smears were positive to Neisser. A diagnosis of gonorrhœal bilateral salpingitis, probably involving the appendix and right ovary, seemed evident.

Treatment and Result. — In the belief that the pus was in the tubo-ovarian mass, and not in a parametrial or adventitious abscess cavity, it was decided not to perform colpotomy, but to give the usual palliative treatment in Fowler's position, and general supportive measures, with a view to a probable laparotomy later. But the patient did not improve, nor did she seem a subject for safe abdominal section. The mass in the right side of the pelvis became gradually tougher, less elastic, and less fluctuant. The girl ran an irregularly fluctuant septic temperature, losing ground from toxic absorption. Gradually the tenderness extended higher along the right side; finally pylephlebitis and general septicæmia developed, and death ensued six weeks after entrance.

Comment. — This young woman was so seriously infected and had such poor resistance that she probably would have died under whatever treatment. The outcome, however, caused regret that a prompt vaginal section had not been

done: this would have provided drainage and might have relieved the patient from a long, prostrating period of toxic absorption; might have husbanded her resistance, and probably would have prevented the ascending infection which ultimately proved fatal. Possibly, too, this treatment might so far have saved the situation as to permit a subsequent successful laparotomy for complete removal of the diseased organs. On the other hand, while the writer has seen the happiest results from colpotomy for pelvic abscess, he has seen not a few cases like the above fade away, after a long period of drainage, from general septicæmia and exhaustion: others after vaginal section have succumbed to subsequent laparotomy. It is clear that these cases call for close observation and individual study; but it is also clear that wise decisions are not always possible to fallible human judgment.

CASE XXVI

An unmarried sales-girl of twenty-three, born in Scotland and emigrated to the United States as a child, was referred to the hospital with a history of persistent and increasing pain in both lower quadrants of the abdomen, for the previous year, without vomiting or disturbance of general health other than slight recent loss of weight. The catamenia were said to have been regular since the age of fourteen, and always rather painful and profuse.

Diagnosis. — The patient was a slender, wiry, red-haired girl, of slight stature, with sharp, keen features, but not emaciated, her face heavily freckled, and the extensor surfaces of her forearms also presenting many discrete brownish pigmented macules. There was slight bilateral, non-tender enlargement of the cervical lymph-nodes and a circumscribed area of consolidation at the apex of the right lung. The abdomen was soft and retracted, with marked epigastric pulsation, and tympanitic throughout. There was extreme tenderness, without notable muscular spasm, over both lower abdominal quadrants. The genitalia showed no external evidence of gonorrhœal or syphilitic infection. The hymen was intact and would not admit one finger. Rectal examination showed a small, anteflexed uterus, and in each lateral pelvic vault a very tender, elongated mass about the size of a small sausage. The lower extremities were normal; examination of the urine was negative.

Under observation, the patient was found to have a subnormal temperature each morning, with a daily afternoon elevation never exceeding 100° F. The white count was 6000, the hæmoglobin 70 per cent; the differential white count showed 60 per cent of lymphocytes; there was no sputum. A diagnosis of bilateral tubercular salpingitis was made, and laparotomy was advised and accepted.

Treatment and Result. — At operation both Fallopian tubes were found enlarged, thickened, and convoluted, but without superficial tubercles, and no miliary tubercles of the peritoneum were observed. The left ovary was involved in the mass on that side and was removed with its tube.

The right tube, not so extensively involved, was resected, leaving the healthy right ovary and the proximal one-half inch of the tube *in situ*. The normal appendix was also removed, and the abdomen closed in layers without drainage. The pathologic report was bilateral tubercular salpingitis and left tubercular ovarian abscess.

The convalescence was at first normal. The stitches were removed on the seventh day. On the tenth day a small fistula opened near the lower angle of the wound and continued to discharge a slight amount of thin whitish fluid. At the end of three weeks, the patient was discharged, with a persistent fistula, and sent into the country, where she lived an open-air life, and whence she returned to her occupation after six months, having gained twenty pounds and feeling in better general condition than ever before in her life. The fistula persisted for a year. At the end of this time she reported, somewhat discouraged, but still feeling in excellent health, able to work regularly, and free from pain. Her catamenia had continued regular, but were much decreased in amount. A single injection of Beck's paste was made into the fistula, which thereupon closed, and has remained closed ever since. There have been no cough and no extension of the consolidation at the right pulmonary apex. Since leaving the hospital, the patient has had no recurrence of afternoon pyrexia.

Comment. — Tubercular salpingitis is probably always secondary to some focus of infection elsewhere in the body, usually either pulmonary or renal. It may or may not be associated with miliary peritoneal tuberculosis. In this case the primary focus was presumably at the right pulmonary apex, very likely dating back to childhood and causing no noteworthy symptoms. Multiple freckling of the face and forearms seems to be characteristic of such relatively benign tubercular infections in children and young adults of this type. In the absence of rapidly progressive pulmonary process, the diseased tubes should always be removed, following which, under good hygienic conditions, the primary focus seems likely to become and remain arrested or quiescent for a considerable period of time, perhaps per-

manently healed. Experience shows it better not to drain such cases. If drained, a sinus is sure to be established. If not drained, a considerable proportion of cases will heal without sinus. The value of Beck's paste in the treatment of an established sinus is very great.

CASE XXVII

A modest, upper serving-maid of twenty years brings her one complaint that she cannot sit without pain. Careful inquiry fails to elicit any other symptoms: all functions are apparently normal, there is no dysuria or pain on defæcation, she is well able to attend to all her duties; but for several months she has suffered pain on sitting, and has worried because she could see no reason for her trouble.

Diagnosis. — Inspection disclosed a reddish, papillary growth, the size of a small raspberry, protruding from the urethral meatus. It was sessile on a large base at the posterior margin of the meatus, was exquisitely sensitive to touch, but did not bleed under careful handling. In the absence of any evidence of gonorrhœal infection, and from the seat and appearance of the growth, it was easy to differentiate it from abscess of Skene's glands, from polypus of the urethral mucosa, and from the more encircling, smooth, less vascular, and more insensitive prolapse of the mucous membrane not infrequently observed in parous women, or in cases of antecedent urethritis: it was evidently a urethral caruncle, of unknown ætiology, a true angioma, as subsequent microscopic examination proved it to be.

Treatment and Result. — These little neoplasms can often be removed under local cocaine anæsthesia; but owing to the young woman's timorous condition, it was thought best to use ether. The growth was removed and the bleeding base closed in with fine catgut interrupted sutures. There was no pain on micturition while the urethra was healing, and the distressing symptom originally complained of disappeared.

Comment. — These angiomata are more frequently observed in older, even aged, women, as a result of irritation from concentrated urine. Painful and frequent micturition are commonly complained of, and also pain and bleeding on coitus. It is interesting to note why the young subject of this case complained of pain only when sitting, although she might well have found walking uncomfortable: on sitting, like any modest woman, she brought her thighs together and thus compressed the labia on the sensitive growth. When the base

is small or the angioma is somewhat pedunculated, and there is but slight bleeding, the raw surface may be touched with nitrate of silver or carbolic acid, instead of applying sutures. Even in such cases, however, sutures are preferable, because otherwise there is considerable smarting on micturition until the base is healed.

CASE XXVIII

An unkempt, unclean looking, overgrown, motherless girl of eighteen was brought from the country to the clinic by her father to find out what the matter was. He said she lived at home and looked after his younger children and did the housework; he thought she ate pretty well and didn't complain, but acted as though something ailed her about the privates, and when she thought no one was looking at her he had noticed that she seemed to rub herself through her clothing. On the whole he didn't think she seemed quite as well and natural as usual during the past year, but didn't seem to him to have any particular disease he was acquainted with.

Diagnosis. — The girl was well developed and looked well nourished; no general disorder was found; she said she had no trouble with her periods, but that there was a discharge from her privates and she itched there. Inspection of the external genitals showed the usual lesions of rubbing and scratching; the parts were very unclean, and there was much smegma about the labia minora and prepuce. Diffused over the moist mucous surfaces were numerous pointed condylomata, varying in size from pin-head to cauliflower growths as large as a lead pencil; the latter had small pedicles, and a number of the latter type were scattered over the majora and below the fourchette; some of the latter looked inflamed, and bled easily. There was a moderate vaginal discharge, from which several smears were taken. Later examination of these smears failed to show the gonococcus, neither were there any of the usual stigmata of gonorrhœa about the urethra, vestibule, or Bartholin's ducts. The hymen was unbroken, and the vagina was not explored. Careful inspection of the pubic hair, particularly on the mons, disclosed numerous pediculi attached to the hairs near the skin. There was an offensive odor from the vulva of this neglected, unclean girl.

Treatment and Result. — As the girl could have no proper care at home she was taken into hospital, especially as it was expected to remove the warts. After a thorough washing

with soap and water the mons was shaved and the labial hair clipped short; mercurial ointment was applied once a day for several days, when it was thought the parasites were killed; then after another cleansing with soap, a general hot bath and change of bed-clothing, a weak lysol and water douche was given twice a day, followed each time with carbolic acid and lime water sopped over the vulva, and this in turn followed with borated lanolin. In the course of a week the vaginal discharge had ceased, the vulval lesions were healed, and the girl was free from local irritation. It seemed best to remove the larger warts, and destroy the smaller ones with the cautery. Under general ether anæsthesia this was done: each wart was seized with mouse-tooth forceps, drawn up, and severed with the cautery, which arrested bleeding; pin-head warts were simply cauterized; several larger warts on the skin surface of the majora and perineum were excised with a knife, and the base closed with a silkworm suture. The parts were kept dressed with a plain gauze compress. As expected there was considerable shock from local nerve injury; but this over, the girl made a good convalescence and went home very happy two weeks later.

Comment. — This pointed condyloma, or moist wart, often called, not always correctly, venereal wart, must be differentiated from the verruca vulgaris or common wart, and from the condyloma lata. The common wart is generally found on the skin surface of the majora or on the mons; it seldoms occurs in such numbers as the moist wart, and rarely causes symptoms; it is often pigmented. If it is any annoyance, or its removal is desired for cosmetic reasons, it may be excised and cauterized under local anæsthesia. The flat, broad based condyloma is a lesion of secondary syphilis, and requires treatment as such. In the case of the pointed condylomata, when the patient is unwilling to have them removed *in toto* under general anæsthesia, they may be treated by gradual removal in the office under local anæsthesia, using silver nitrate stick as a cauterant. If the ætiological cause of the growth is gonorrhœa, this infection must be treated and the cause of the irritating discharge removed, before dealing with the wart itself.

CASE XXIX

A school-girl of sixteen averred that she had noticed progressive abdominal enlargement for several months. Her catamenia were alleged to have been always regular and normal since their first appearance at the age of fourteen. The latest period was stated to have been a week before entrance to the hospital, to which she was referred by her physician with a diagnosis of tubercular peritonitis.

Diagnosis. — Physical examination showed a slender, but well-proportioned girl, whose abdomen was symmetrically enlarged to the size of a full-time pregnancy. There was tympany in the flanks, but dulness over a median area corresponding with a large rounded mass rising out of the pelvis. A distinct fluid wave could be elicited in this mass. No fœtal movements were felt or heart heard. Vaginal examination showed a stretched introitus, easily admitting two fingers. The cervix and uterus were small and crowded forward behind the symphysis puborum by a smooth rounded, elastic, superincumbent mass, corresponding with that felt by abdomen. It seemed that the suggested diagnosis of tubercular peritonitis could be ruled out because the abdominal fluid was evidently encapsulated; and the suspicion of pregnancy, by the feeling of a small uterus distinct from the large mass. A diagnosis of ovarian cyst was therefore made, and laparotomy for its removal advised and accepted.

Treatment and Result. — At operation, a large, non-adherent, unilocular cyst of the right ovary was found, and removed intact together with the normal appendix. The internal genitalia appeared otherwise normal. The patient made a normal convalescence and was discharged well on the eighteenth day after operation. The cyst measured 8 by 8 by 11 inches, and weighed sixteen pounds.

Comment. — This cyst must have been several years in developing, and indeed was probably congenital. Doubtless it had enlarged somewhat rapidly during the previous few months, yet it must have been for some time of such size that the patient's failure to notice it sooner and the absence of visceral pressure disturbances seem inconceivable.

CASE XXX

A shop-girl, aged twenty-one, single, had had pain in the left iliac region periodically for the past eighteen months; menstruation had been regular, and bowels constipated. At the time of the first visit the pain was very severe; pulse 120, temperature 100° F.

Diagnosis. — Examination revealed a fluctuant tumor as large as a five months' pregnant uterus, dipping into the anterior vaginal fornix, and extending from the left lower quadrant to the right of the median line. The cervix was small and central; but the uterine body was obscured by what was obviously a cyst of the left ovary in front of it.

Treatment and Result. — On making the abdominal incision, it was found that the tumor was everywhere adherent to the parietal peritoneum, to omentum, and posteriorly to intestine. After freeing all but the intestinal adhesions, it was found advisable partly to empty the cyst in order to gain room to separate the intestinal adhesions by sight. One and one-half pints of bloody fluid were removed, the intestine freed, and the pedicle tied off. The pedicle was 2 cm. thick, and the number of twists was not definitely made out. The right ovary, enlarged to 4 cm. in diameter, was cystic, and with its tube was removed. The whole parietal peritoneum was reddened and oozed somewhat, but the abdomen was closed without drainage; the convalescence was normal. The cyst was dark purple in color, with dark red thickened walls, and measured 14 cm. in diameter; it contained coagulated, red, jelly-like material, and close by the twisted pedicle was a portion of ovary 3.5 cm. in length, dark red on section. Pathological diagnosis; hæmorrhagic ovarian cyst.

Comment. — Cases of axial rotation of ovarian cysts, with twisting of the pedicle, are not as frequently observed as formerly, for the obvious reason that in these days such tumors are discovered and removed early, before the size of the cyst and other conditions that may produce rotation become operative. In this case the axial rotation was obviously slow and gradual, and the torsion was much greater

and the pathological changes more extensive than in Case CLII. The cyst wall must have derived a considerable nutrition from the extensive peritoneal adhesions, and it showed no degenerative changes. As to the cause of the rotation in this case, it is idle to speculate.

SECTION III

MATURITY

MATURITY

It is during this period, extending as a rule from the twentieth to the forty-fifth year, that woman fulfils the great and holy purposes for which she was created. During this period the great majority of women marry, bear and rear their children, make and inspire the home, and serve as willing and devoted helpmates to their chosen husbands. Those to whom this blessedness is not accorded find in this epoch of their greatest mental and physical perfection rich opportunities for service in the education of others' children, in nursing the sick, and in numerous fields of usefulness in public and in private life. It is a period of potential effectiveness, and under normal circumstances, the preparatory stages of life having been safely passed, with wise, temperate, and hygienic living should be a period of mental and physical health. To a less degree than man is adult woman the victim of surgical injuries and of the general infections; with her the *risque professionel* is chiefly associated with pregnancy and childbearing, enhanced at times by the mental and physical overstrains incident to family life. To pathologic sexual function should also be added, as menaces to health and life, the venereal infections, and the not infrequent occurrence of benign neoplasms, the malignant newgrowths occurring less frequently. Altogether, it should be said, the nervous and procreative systems of adult womanhood are highly organized, and like intricate machinery are always liable to get out of order. It is not strange, therefore, that the prophylactic observation and medical care of this period of woman's life form a large proportional part of the important duties of the family physician.

The pathological conditions incident to the period of maturity may be summarized as follows:

I. Functional Disturbances:

1. Disorders of menstruation.
2. Dyspareunia.
3. Sterility.
4. Disturbances of pregnancy.
5. Pathologic labor.
6. Pathologic puerperium.

II. Malformations and Displacements:

1. Malformations.
   - *a.* Double vagina.
   - *b.* Malformations of the uterus.
2. Displacement of the Uterus.
   - *a.* Anteflexion.
   - *b.* Anteversion.
   - *c.* Latero-displacements.
   - *d.* Retro-displacements.
   - *e.* Prolapse of the uterus.
   - *f.* Inversion of the uterus.
3. Splanchnoptosis.

III. Infections:

1. Vulvitis, vulvo-vaginitis, vaginitis.
2. Endocervicitis.
3. Endometritis.
4. Metritis.
5. Salpingitis and oöphoritis.
6. Peritonitis, pelvic and general.
7. Pelvic inflammation.
8. Thrombo-phlebitis.
9. Pyæmia.
10. Septicæmia.

IV. Traumata:

1. Of the vulva and vagina.
2. Of the vaginal outlet and pelvic floor.
3. Of the cervix uteri.

4. Of the vesico-vaginal and recto-vaginal septa.
5. Of the uterus.

V. Neoplasms:

1. Of the vulva.
2. Of the vagina.
3. Of the uterus.
4. Of the ovary.

I

FUNCTIONAL DISTURBANCES

1. Disorders of Menstruation

The menstrual function of adult woman may be disturbed by the same causes that obtain during adolescence; the marital relation and pregnancy, however, afford additional ætiological factors.

The amenorrhœa of pregnancy and early months of lactation is of course physiological; but when the function is not reëstablished in from six to twelve months, a pathological cause may be found in impaired vitality, or in hyperinvolution of the uterus with attendant endometrial atrophic changes. Early obesity in the over-eating, inactive matron is sometimes associated with absence or great diminution of the menstrual flow which had been well established at puberty. On the other hand the scanty and poorly established function of adolescence may become quite normal under the well-regulated sexual relations of congenial married life.

Excessive menstruation, or menorrhagia, is more frequently observed in this period than in adolescent virgins. While sometimes observed in the latter, as the result of nutritive endometrial changes without infection, or of excessive pelvic congestion from undue, violent exercise, in maturity menorrhagia has many possible causes in the uterine malpositions, pelvic infections, and neoplasms, as well as in the obstructive circulatory diseases and subinvolution. And this symptom may often be accompanied by inter-menstrual flow, or metrorrhagia, from a great variety of causes.

When the causes of painful menstruation have been discovered and removed in adolescence, the causes of dysmenorrhœa in maturity are chiefly to be found in the infections, traumatisms, and displacements incident to childbirth and impure sexual relations, and to uterine fibro-myomata. In some cases of moderate and endurable menstrual pain of young virgins, the pelvic congestions incident to the marital relation cause a degree of dysmenorrhœa demanding diagnosis and treatment. On the other hand dysmenorrhœa in virgins due to obstructions from flexions or swollen endometrium, and sometimes when due to neurotrophic causes, disappears in the matron, if she is fortunate enough to conceive and bear a child. Unfortunately, however, such women are often sterile, unless perchance successfully treated. Many women endure their menstrual pain, and are led to seek medical aid primarily in the hope of relief from sterility.

2. Dyspareunia

This symptom is not infrequently brought to medical attention, not only on account of the subjective pain of the wife, but because of resultant conjugal unhappiness. In some cases coitus is simply painful, in others it is quite impossible. Advice is seldom sought for the transitory pain generally incident to the abrasions and linear tears of the hymen at the first complete intercourse, although advice might well be sought by the bridegroom before marriage. Probably many cases of persisting dyspareunia are due to the ignorance, unskilfulness, and unconscious brutality of some men. It is true that many men do not know how properly to perform the sexual function, with duly unselfish regard for the comfort and satisfaction of the wife. Not only is the act insisted on at times undesired by the wife, but is performed with undue haste before increasing desire has brought about natural relaxation and physiological lubrication of the introitus. Aside from these causes, ascribable to the selfish or uninstructed husband, there should be mentioned an unusually thick and perhaps insufficiently patent hymen; organic stenoses due to malformation or to scar-

tissue from burns or obstetric trauma; inflammatory processes of the vulva, vagina, uterus, or parametrium, acute or subacute; prolapsed ovaries, urethral caruncle; fissures of the anus; and finally that condition of hyperæsthesia of the introitus known as vaginismus, a reflex, spasmodic contraction of the constrictor cunni, levator ani, and adjacent muscles. Vaginismus occurs in nervous, hysterical women, perhaps sometimes induced by pressure against a urethral caruncle, by hyperæsthetic hymen or carunculae myrtiformes, but is often due solely to the fear of pain. In some cases neither coitus nor digital vaginal examination is possible, so quickly does the spasmodic muscular contraction occur. Sometimes the muscular contraction takes place after intromission and results in *penis captivus;* and occasionally the vaginismic condition constitutes a decided hindrance to otherwise normal labor.

3. Sterility

In spite of all that has been written on race suicide, in spite of the fact that for so-called prudential reasons many families, especially of the old American stock, limit their offspring in these days to one or two, the maternal instinct is still, probably, the most deeply seated. " I would give half my substance, if I could conceive and bear a child " is an expression not infrequently heard by the consulting gynæcologist, who may have just returned from the care of a self-induced abortion. And it has often seemed to the writer that in the respect of procreation all married women could be divided into two classes, — the one including women able to bear children, who will not; the other those who would bear children, but cannot. Altogether, it may be said that the appeal for help of those who would, but cannot, gratify the maternal instinct should incite the most careful inquiry and painstaking effort of the physician who loves his fellowmen.

Sterility has been variously defined. A woman who fails to bring forth a living child is surely devoid of desired accomplishment; but the prevention of abortion and the pro-

motion of safe delivery are best classed and considered in other connections. For present purposes sterility is most appropriately defined as inability to conceive. The valid impediments to conception are many, and to traverse them would be to survey nearly the whole field of gynæcology. It is well known that besides surgical mutilations, pelvic infections, malformations and displacements, traumata of former labor, vaginal discharges, general poor health, and obesity with concomitant ovarian inactivity, there are other potent causes. It is well known that in a considerable proportion of cases non-conception is due to the absence or disease of spermatozoa, or even to male impotence, or to a mal-condition of the essential female genitalia due to venereal infections of which the wife is the innocent victim. The first step, therefore, in the study of sterility, except in the presence of obvious mechanical cause in the wife, is the investigation of the procreative function of the husband. It is undoubtedly true that in some cases failure of conception is due to marital incompatibility, and probably in other cases to venereal excesses, and to ill-timed and imperfect coitus. In all cases, the accurate diagnosis of cause and the successful application of treatment, when possible, of this peace-destroying, functional disturbance of woman affords the physician one of his greatest satisfactions.

4. Disturbances of Pregnancy

The procreative function of woman is often disturbed by some of the many possible complications and abnormalities of pregnancy, either those pathological conditions consequent upon pregnancy itself, or what may be regarded as accidental complications. In some cases pregnancy aggravates antecedent affections, previously unnoticed or thought trivial. The watchful care and medical supervision of pregnancy may prevent, ameliorate, or remove many of these disturbing conditions; but in others nature may, or medical art must, terminate the pregnancy prematurely in the interest of the woman's health or life. The acute and chronic infectious diseases are serious complications and often give

rise to spontaneous premature delivery. Cardiac, pulmonary, and renal diseases are always a cause of anxiety, and not infrequently necessitate the termination of pregnancy. The toxæmias of pregnancy, whether manifested in the early months as pernicious vomiting or acute yellow atrophy of the liver, or in the latter months as so-called præ-eclamptic toxæmia which may or may not end in actual convulsions, constitute the most serious complications of pregnancy; their prevention and treatment call for the highest order of medical skill and judgment, and even under most judicious treatment often terminate disastrously in fœtal and maternal death.

The continuance of pregnancy is sometimes jeopardized by certain complications necessitating surgical operation. Fortunately anæsthesia and modern surgical technique have made many operations safe as to maternal life, with comparatively small risk to the continuance of pregnancy. At the same time, of course, when the conditions are not urgent it is wise to postpone operation until the time of labor or later. Various injuries must receive surgical treatment whatever the effect on concomitant pregnancy, and so must some cases of appendicitis, strangulated hernia, intestinal obstruction, cholecystitis, and carcinoma of the cervix. Rapidly growing ovarian cysts, with or without axial rotation, sometimes demand operation during pregnancy. Uterine myomata, although sometimes the indirect cause of abortion, rarely require surgical treatment during pregnancy, although their removal may be necessary or desirable at the time of labor. Operations about the vulva and anus are peculiarly liable to excite uterine contractions and abortion; fortunately surgical procedures in this region are seldom necessary during pregnancy. The shock and pain of dentistry were formerly a cause of interrupted pregnancy; but suitable anæsthesia and modern technique have made all necessary dentistry reasonably safe.

Ante-partum hæmorrhage from uterine sinuses uncovered by partial separation of the placenta, whether normally seated or implanted over or near the internal os uteri, not infrequently leads to the termination of pregnancy, by nature or

art. The same may be said of hydatidiform mole and acute hydramnios. In addition to the above-mentioned causes of interruptions of pregnancy should be mentioned diseases of the decidua and placenta, and other conditions which lead to fœtal death, — such as syphilis, and torsion of the funis, and the mechanical traumata of coitus, riding on horses or in automobiles, and the expedients of the criminal abortionist.

Finally, the course of normal pregnancy is disturbed by the arrest of the fecundated ovum before it reaches its normal nidus in the uterus. Except in the rare cases of secondary abdominal pregnancy consequent on tubal abortion, or non-fatal tubal rupture, with successful placental implantation, ectopic pregnancy is fatal to fœtal life. And except when tubal rupture is extra-peritoneal, it is often fatal to maternal life without timely surgical treatment. The possible effect in pregnancy of malformations and displacements of the uterus will be considered in another connection.

5. Pathologic Labor

Aside from certain accidental complications which modify the course of normal childbirth, such as hæmorrhage, toxæmia (with or without convulsions), certain cardiac conditions, rupture of the uterus, sudden maternal death, prolapse of the funis, intra-uterine fœtal asphyxia, the pathology of labor rests on the tripod of P's, — the Power, the Passage, the Passenger: and the study of dystocia lies in the consideration of

A. Anomalies of the expellent powers.
B. Anomalies of the maternal passage.
C. Anomalies of the fœtal passenger.

A. Anomalies of the Expellent Powers

There is no absolute dynamic standard of the expulsive forces; they are rather to be judged by their effects in view of the resistances to be overcome. Pains of adequate power for timely, normal delivery in one case may prove entirely ineffective in another in which the resistance is greater: only in a relative sense, then, may pains be said to be strong

or weak; if relatively too strong for the resistance, labor will be precipitate; if relatively too weak, labor will be delayed.

1. **Precipitate Labor.** — Through a roomy pelvis with the slight resistance of distensible, multiparous soft parts, a fœtus of not excessive size may be expelled with great rapidity: women are sometimes caught unawares, and are hurriedly delivered in shops, doorways, and public conveyances. In such cases the rare accident of acute uterine inversion has occurred, and there is an ever present danger of post-partum hæmorrhage from the fact that the uterus is emptied so speedily that adequate muscular retraction does not take place before the uterine sinuses are uncovered. Unless the surprised matron has the ready wit to sink down on floor or sidewalk there are possibilities of fœtal injury or rupture of the funis. Sometimes, owing to excessive reflex muscular irritation, there is violent contraction of the abdominal muscles early in labor before softening and dilatation of the passage: subcutaneous emphysema may result, and lacerations of the genital tract; even rupture of the uterus may ensue in case of pelvic obstruction, and the fœtus may suffer asphyxia or cranial injury. In the former type of precipitate labor, treatment, if available, should be to guard the uterus and promote retraction. In the latter type prompt surgical anæsthesia will control the excessive muscular action.

2. **Delayed or Tardy Labor.** — Under normal conditions uterine contractions are rhythmical like the waves of the rising tide; they are of gradually effective length and are followed by an interval for sufficient nerve repose; retraction of muscular fibre and thickening of uterine wall take place in the working uterus above the demarking contraction ring, while the lower, passive segment yields, thins and opens; then as a favoring wind swells the tide, the subsidiary force of contracting abdominal muscles increases the power of the uterine contraction, and in normal time the human tide is full. Any departure from these physiological conditions results in pathological labor.

Disturbed and inefficient uterine action may be due to a wide variety of causes. The muscular development of the

uterine wall or its innervation may be imperfect; or the wall may be impaired by disease or the presence of myomata. Overdistention of the uterus by hydramnios, by twins, or by one fœtus of excessive size may unfavorably affect its contractility. Extreme uterine anteversion results in a misdirection of energy and a loss of the force of gravity on the lower uterine segment; and a neglected bladder or loaded rectum may interfere with uterine contractions. Although contracting normally at first, the uterine musculature may become exhausted by delayed cervical dilatation from any cause: early rupture of the membranes and loss of the hydrostatic dilating bag, tissue changes in the cervix, adhesions, and abnormal rigidity are effective causes. Defective first-stage pains are often observed in the physiologically unfit, who have received during pregnancy no adequate preparation for their ordeal; like him who starts to run a Marathon race or pull a Varsity oar without previous training, the young parturient soon falls by the way. But whatever the cause, the wave-like, rhythmical character of the contractions changes; the pains become short and cramp-like, and without adequate intervals for nerve repose; there is not only no progress, but acute suffering, and physical and nervous exhaustion. Later, a consultant finds a partly dilated and often rigid cervix, a uterus in more or less tetanic contraction, a high contraction ring, a failing fœtal heart, and an exhausted patient.

When inertia occurs later in labor it may be due to some pelvic obstruction or deformity, or even a full bladder may prevent fœtal descent. Or there may be a faulty presentation or position, vain effort against which has exhausted the uterus and the parturient as well. Not infrequently delayed labor in the second stage is entirely due to the fact that the mother lacks the usually instinctive knowledge of how to use her abdominal muscles. With each successive pain, instead of fully inflating her lungs, closing her glottis, contracting her abdominal muscles, and thus actively helping to express the fœtus by compression of the uterus between the spine, the depressed, fixed diaphragm, and the contracting anterior abdominal wall, she explodes in outcries of pain, loses the

VULVAR CICATRIZATION

FROM A DOUCHE OF PURE CREOLIN

diaphragmatic *point d'appui*, and gains nothing from short, ineffective strains. Instruction beforehand, with later encouragement and coaching, will often overcome this cause of delay. Finally, delayed labor may sometimes find no explanation other than that attributable to hyperæsthesia, to constitutional inability to bear pain; wise medical supervision during pregnancy will do much to mitigate this untoward condition, and a skilful use of anæsthesia will temper pathological pain and restore physiological function.

B. Anomalies of the Maternal Passage

A great variety of abnormalities, congenital or acquired, may obstruct the parturient canal and prove a cause of dystocia.

1. Anomalies of Soft Parts.

(*a*) *Vulvar Atresia.* — A thick, rigid, almost imperforate, or septate hymen, through which insemination has occurred without penile penetration, may cause an easily remediable obstruction. More serious difficulty may ensue from cicatricial atresia consequent on injuries in childhood, or ulcerative processes following smallpox, diphtheria, or scarlet fever, or the accidental use of escharotics. The vulvar outlet may be very small and the perineum inelastic, especially in women first becoming pregnant in late maturity. Labial œdemas and varicosities, and slowly forming intrapartum hæmatomata cause temporary obstruction and sometimes have unfortunate *sequelae*.

(*b*) *Vaginal Atresia.* — Incomplete atresias, when congenital, seldom cause serious obstruction, although the ring-like diaphragm is sometimes mistaken for an imperfectly dilated external os. The acquired atresias resulting from cicatrization consequent on local injuries of pessaries, caustics, and antecedent labor, as well as those resulting from infectious diseases, sometimes give rise to marked dystocia; cicatrices following unfortunate plastic surgery sometimes necessitate delivery by Cæsarean section. Prolapse of the anterior vaginal wall, especially if accompanied with cystocele, may result in delay, and sometimes also in subsequent fistula by pressure necro-

sis; a vesical calculus in the cystocele, unrecognized and untreated, may not only obstruct delivery, but be the cause of serious bladder inquiry. Likewise a prolapsed posterior wall with rectocele, negligently left filled with scybalous masses, may have a similar, serious result. Indeed, a voluminous, subinvoluted vaginal wall may be pushed down by the descending head, much like the proximally detached sleeve-lining of a top-coat by the arm's struggling effort, and operative skill may be necessary to secure safe delivery. As mentioned elsewhere, the complete septum of a double vagina usually offers no especial obstruction; but a partial longitudinal septum is pushed down by the advancing head and sometimes needs to be severed. Cysts and other vaginal neoplasms, to be referred to later, sometimes cause effective obstruction; and finally a considerable dystocia is often observed as a result of excessive fat on the one hand, and by the superb muscular development of athletic women, on the other. Vaginismus is also elsewhere referred to as a cause of dystocia; but the muscular spasm disappears with anæsthesia.

(*c*) *Cervical Atresia.* — An almost complete atresia sometimes developes during pregnancy as a result of antecedent endocervicitis, — essentially a glueing together of the external os, which generally yields to digital pressure. Sometimes the cervix is abnormally rigid from chronic inflammation, hypertrophic elongation, or the atrophic changes occasionally noted in elderly primiparae; and occasionally the cervix is found to be a mass of cicatrix as a result of an unfortunate trachelorrhaphy or partial amputation. Sometimes these cicatricial cervices will soften during pregnancy and will dilate in labor with or without the help of hot douches and digital taxis; but occasionally the entire cervix is pushed off by the advancing head, or the lower uterine segment may rupture: timely incision or the use of hydrostatic bags is efficient in many cases; but owing to the risk of sudden extensive laceration Cæsarean section is sometimes a more conservative measure. Cervical thrombi or myomata may cause effective stenosis and obstruction, as may also œdema and hypertrophic elongation of the anterior lip.

(*d*) *Uterine Displacements.* — Reference is made elsewhere to the possible results in pregnancy and labor of uterine retro-displacements, procidentia, and anteversion. Of the last-mentioned displacement it should be said that in primigravidae it is usually indicative of bony pelvic contraction; but in multiparae, with pendulous abdomen, it may mean only diastasis of the recti and uterine hernia, and consequent dystocia is easily remedied by such posture or mechanical appliance as will bring the uterus into normal relations with the pelvic brim. In this connection attention should be directed to the results in parturition of operations to correct retro-displacements of the uterus. Effective anterior fixation of the uterus, whether vaginal or abdominal, naturally interferes with the normal muscular hyperplasia, hypertrophy, and distention of pregnancy: the anterior wall, while it cannot later distend, may earlier hypertrophy and cause later mechanical obstacle; the posterior wall of the distending uterus becomes unduly thin, and with the concomitant displacement of the cervix and misdirection of the uterine axis, active labor may result in uterine rupture or safely be terminated only by abdominal section. It is not a harsh judgment to say that anterior fixation of the uterus during the possibility of pregnancy is an obstetrical crime.

(*e*) *Uterine and Ovarian Neoplasms.* — 1. *Myomata of the Uterus*, aside from interfering with conception and causing conditions which may result in abortion, may be a cause of dystocia in several ways. A myomatous growth may obstruct the passage mechanically, and necessitate Cæsarean section, although it often will recede from the pelvis or may be lifted up by taxis, if not adherent, during the first stage of labor; but a fibroid higher up, in no way obstructing the pelvic inlet, may cause fœtal or placental malposition, and thus give rise to fœtal or accidental dystocia. Pedunculated intra-uterine myomata may be pushed down by the advancing head, which may snap the pedicle, or the polypus may have to be removed surgically before the head can advance. Altogether uterine myomata complicating labor entail wide pathologic possibilities, not only incident to labor itself, but including puerperal involution and atrophic or degenerative changes.

2. *Carcinoma of the Cervix*, if earlier inoperable or not resulting in abortion, may cause either dystocia or serious hæmorrhage, according to the nature of the growth; in either case, Cæsarean section gives the best fœtal prognosis.

3. *Ovarian Cystomata*, if large, should be discovered and generally removed during pregnancy. Small cysts may escape detection until the invasion of labor; and if then they do not insuperably block the pelvis and thus do not cause dystocia, they may be ignored at the time, but watched subsequently for possible axial rotation and rapid enlargement. But when a small, adherent, perhaps dermoid, cyst is in the way, the old teaching to tap the cyst should be ignored; better results may be expected by removing both fœtus and cyst through abdominal incision. Solid tumors of the ovary, when a cause of dystocia, should be dealt with on similar principles.

2. Anomalies of the Bony Pelvis.

The capacity of the bony pelvis may be relatively too small to pass the fœtal passenger, from a variety of causes. Although of perfect symmetry, the pelvis may have failed to reach normal development, and may be uniformly contracted in all diameters; this *pelvis æqualibiter justo minor* is the anomaly most frequently met with among the present descendants of old American stock in the North. Or the pelvis may be flattened by long hours of sitting or by carrying too heavy burdens in youth while the component pelvic bones are still soft and incompletely fused: these occupational causes are less frequently observed among well-to-do classes in this Country. The sacrum may be tilted forward and the pelvis distorted as a result of rickets, osteomalcia, tuberculosis, hip-joint diseases, surgical accident, and a great variety of spinal disease and vertebral displacement. The pelvis may be of the masculine type, with unfeminine, thick, heavy bones; or, in the so-called funnel pelvis, there may be transverse contraction at the pelvic outlet. Again, an otherwise normal pelvis may be deformed by exostoses, or cartilaginous new growths. Or the outlet may be contracted by forward displacement of the coccyx, with anchylosis. Even

if the pelvic measurements are normal, dystocia may arise from abnormal pelvic inclination and changed relation to uterine axis.

This summary of the more common anomalies of the maternal passage likely to embarrass or prevent the successful action of even normal powers on a normal passenger would be futile indeed, if it did not connote the important duty of painstaking ante-partum examination. Accurate pelvimetry, intra-pelvic exploration, and uterine palpation are as necessary to the obstetrician as tactical reconnoissance to an invading army. Not that physical abnormalities can thereby be removed; neither can ravines, sunken roads, nor impassable water courses; but accurate, timely, foreknowledge serves alike the obstetrician and the commanding general, and is the precursor of all intelligent action.

C. Anomalies of the Fœtal Passenger

The fœtus may be a cause of dystocia either from excessive development, malformation, or from abnormal or undesirable presentation.

1. *Excessive Development* due, according to some authorities, to abnormal prolongation of pregnancy, may result in a size of fœtus too large for successful delivery through a normal passage, even when normal powers are supplemented by art. The writer is moved to record his opinion, whether right or wrong, that pregnancy is never prolonged beyond normal limit, although such it may appear to be. But in either case the fact is indisputable that the fœtal weight sometimes, although rarely, exceeds twelve pounds; and further, that a fœtus weighing not more than ten pounds may be a cause of dystocia. The intelligent practice of obstetrics, therefore, presupposes an observation of fœtal growth during gestation; with a knowledge of pelvic capacity and the training of experience it is not usually difficult to recognize the time when a fœtus has reached a development commensurate with the passage through which it must pass, and a timely induction of labor may result in safe delivery, unless, as is often the wiser plan, the pregnancy is allowed to go to full term with the intention of performing elective

Cæsarean section. In unstudied cases at full term the fœtus of excessive growth may require Cæsarean section for safe delivery, or indeed embryotomy in late, neglected cases. Premature ossification of the fœtal head, which prevents moulding, is occasionally observed as a cause of dystocia.

2. *Malformations.* — A great variety of deformities and malformations sometimes so far changes the fœtal shape and size as to give rise to serious embarrassment in delivery. Double monsters by no means necessarily cause trouble, although sometimes requiring destructive operation. Hydrocephalus, if at all extensive, generally requires perforation and delivery with cranioclast; it is not judicious to use the obstetric forceps in such cases. The fœtal body may be enlarged by a great possible number of causes, — hydrothorax, ascites, fœtal neoplasms, and a wide variety of cystic degenerations of abdominal organs. It is not to be expected that diagnosis of these conditions can be made before delivery. The enlarged fœtal chest or abdomen must be reduced in size by aspiration or incision, and the fœtus delivered according to the general principles of obstetric surgery.

3. *Abnormal and Undesirable Presentation.* — When the long axis of the fœtus intersects the long axis of the uterus, an oblique position and an abnormal presentation result, most commonly the shoulder being the presenting part; less frequently, when the angle of intersection approximates to 90°, constituting a true transverse position, the ribs or spine are the distinctive presentation. The contracting uterus may bring the fœtal axis into harmony with its own by what is known as spontaneous version, and rarely, in the case of small, macerated fœtus, the mechanism of spontaneous evolution may be observed. Usually, however, these abnormal positions are wisely corrected early by external or bipolar version, or, these failing, by the internal method. In late, neglected cases, when version is no longer safe or possible, decapitation or other form of embryotomy is indicated. When, as is sometimes the case, the malposition is due not to a relaxed condition of multiparous uterine and abdominal walls, but to pelvic contraction, uterine tumor, or placenta prævia, the method of delivery is determined by the nature

and degree of the pelvic obstruction. Occasionally a foot, arm, hand, or funis prolapses beside the presenting part, forming a compound presentation: early reposition of the prolapsing member is the natural resort; this expedient failing, internal podalic version should be performed, before fœtal impaction makes saving operation impossible.

Some presentations and positions, although having a normal mechanism under favorable circumstances, are nevertheless undesirable, and liable to give rise to dystocia. Face and brow presentations, even in anterior positions, have a less favorable fœtal prognosis than the flexed head: in posterior positions these presentations are impossible, unless converted. Even posterior positions of the flexed head, which occur in 30 per cent of head presentations, and which under skilled management usually result favorably, are a very frequent cause of dystocia, and entail a considerable fœtal loss. The chord subtending the sacro-iliac arch, much smaller than that anteriorly parallel with the oblique pelvic diameters, not infrequently is unable to pass the bi-parietal diameter of the engaging head: thus extension of the head occurs, with pathologic possibilities. And even if the flexed head in posterior position successfully passes the brim, the long anterior rotation of 135°, essential to normal mechanism, often fails to take place, except by the guidance of a master hand. Altogether it may be said that occipito-posterior positions are the most frequent cause of pathologic labor.

The natural corollary of what has been said regarding dystocia of fœtal origin is that no woman should be allowed to take in labor without intelligent effort on the part of her responsible medical attendant to know the conditions under which he is to act. It may well be that malformations and pathological fœtal conditions may be impossible of diagnosis; but surely it should be possible before the invasion of labor to form an opinion as to the size of the fœtus and its relation to the pelvis. With this foreknowledge abnormal or undesirable presentations may often be converted, and the labor may be conducted intelligently from the beginning, with a corresponding advantage as to ultimate results.

6. Pathologic Puerperium

Most of the pathologic disturbances of the puerperium, as well as of human welfare and happiness, whether of the genito-urinary tract, the veins of the pelvis or lower extremities, the nipples and breasts, or the mental equilibrium, are due to infection. The puerperal hæmorrhages, usually attributable to retained secundines, — small portions of placenta, fœtal membranes, or succenturiate placentae, which sometimes exsanguinate and exhaust the puerpera, are generally avoidable by intelligent care and observation. The failure of the uterus to involute in normal time may be due to a variety of causes, chiefly to retained products, low-grade endometrial infection, myomata, too early rising, and to circulatory disturbances from uterine displacements, — nearly all preventable causes. Displacements, usually retroversions, and later retroflexion, are the natural *sequelae* of subinvolution, torn and relaxed pelvic floor, the imperfect metabolism of poor general conditions, neglected bladder and rectal function, and protracted dorsal recumbency; and these ætiological factors are for the most part preventable or remediable. Of course the accidence of the general infections, typhoid fever, malaria, diphtheria, scarlet fever, pneumonia, influenza, may disturb what would otherwise be a normal puerperium.

A general survey of the pathology and ætiology of pelvic infections will follow under appropriate heading. In the present connection attention will be directed to a few considerations regarding puerperal infections.

(*a*) *Prophylaxis.* — It will not be disputed that in the great majority of cases puerperal infection is preventable. It is not the writer's purpose to engross the principles of surgical asepsis: like other teachers he has taught them for many years, and it needs not to be pointed out to any one medically educated within the last twenty-five years that obstetrical asepsis is surgical asepsis, neither more nor less, except in so far as the former is more difficult of accomplishment. The subject of general surgical operation is anæsthetized, motionless and aseptically prepared on the table: but

prior to possible obstetrical operation on a parturient woman, numerous intra-pelvic examinations, necessary or unnecessary, may have been made, and the possibility of a break in a well-intentioned asepsis is ever present. In view, then, of the always possible imperfection of all human work, in addition to the well-known principles of aseptic surgery three prophylactic measures are worthy of emphasis: first, a proper preparation of the gravid woman for her subsequent delivery; this involves the whole subject of pregnancy care, having in mind the best attainable physical condition and resistance to possible infection: second, the avoidance in normal cases of labor, and the restriction in pathologic cases, of vaginal examination, having in mind the fact that suitable study of the case during pregnancy and skilful external examination shortly before the advent of labor, together with watchful observation of labor itself, often make vaginal examinations during labor wholly unnecessary: third, the possession of an "aseptic conscience", which instinctively compels rigid obedience to the generally taught and generally known principles of asepsis.

Of course, a puerpera may infect herself by inquisitive, unnecessary, and unclean handling of genitals and breasts, by change of mammary or vulval dressings, or by the digital removal of vaginal clots; and it must be acknowledged that the streptococcus may enter by the tonsil, and by descending infection give rise to serious, if not fatal, involvement of the pelvic organs, general peritoneum, and blood stream: still, aside from the last-mentioned, usually epidemic, cause, it is true that subject to the reasonable limitations of all human, and therefore fallible, effort puerperal infection is almost always preventable.

(*b*) *Symptomatology and Diagnosis.* — Unfortunately there are no early pathognomic symptoms of puerperal infection of the genital tract: headache, malaise, chilliness or even a well-defined chill may be the manifestation of some other pathologic general invasion, and even an elevation of temperature by no means necessarily points to puerperal sepsis. Later signs and symptoms, — pain, tenderness, localized physical findings, and aberrations of pulse and temperature,

especially the last mentioned, have great diagnostic significance; but early diagnosis is much to be desired, for the relief of anxiety, if not for intelligent treatment. A positive knowledge that labor has been conducted with rigid asepsis and a warrantable confidence in his own technique on the part of the obstetrician may permit him to observe a suspected case and suspend judgment for a brief period; but in general, it is a safer procedure, when between the evenings of the second and fifth days the temperature has risen to even not more than 100° F., and remains elevated more than twenty-four hours, and even when unaccompanied by an initial chill, to regard the temperature elevation as evidence of puerperal infection *unless careful investigation detects some other cause.* In other words early effort must be made to explain every puerperal temperature in the interest of early diagnosis of any intercurrent disturbance.

It is always well to remember that a puerpera, as well as any one else, may be seized with any of the general infections, — pneumonia, pleurisy, tonsillitis, diphtheria, influenza, the exanthemata, typhoid fever, or with recrudescent rheumatism or malaria: generally these affections are susceptible of diagnosis. But aside from these, temperature elevation in the puerperium may have many other causes. The so-called " milk fever " of earlier days has very properly disappeared from modern nomenclature; but the fact remains that a well-marked physiological engorgement of the breasts, and early lactation from unprepared and tender nipples may cause an elevation of temperature, especially in hyperæsthetic primipuerperae, entirely apart from the fever attributable to later actual infection of either breasts or nipples: indeed nursing from abraded, cracked, or fissured nipples, when not infected, may be a cause of temperature elevation. Fever in the puerperium may be due to peripheral nerve irritation other than that observed from sore nipples: distention of the urinary bladder, errors in diet, tympanites, and the continued use of Epsom salts are well-known examples. Constipation, whether from resulting intestinal irritation or more probably from re-absorption toxæmia, is a frequent cause of puerperal temperature. What may be called

emotional or psychical fever is frequently observed in the puerperium: the quarrels of domestic infelicity, unruly children, worry over household affairs; anxiety for the newborn baby, especially when former babies have died in early infancy; fear of exposure and worry about the future, in illegitimacy; sudden news, good or bad; dread of surgical operation; loss of sleep and rest on account of an uncared-for baby; too early, or too long staying, visitors, — all these are among the observed causes of temperature elevation. In cases of chronic, semi-quiescent pulmonary tuberculosis there is quite generally a puerperal temperature; and, in spite of the modern objection to the use of the term, "catching cold", with its attendant internal congestions, does give rise to moderate fever. If, then, from among the many possible causes of fever in the puerperium, other than septic infection, there can be found an apparently adequate explanation of temperature in a given case, the obstetrician may well afford to leave the genital tract unexplored, pending further observation, and thus spare the patient the annoyance and pain of intra-pelvic examination. But if no such explanation is forthcoming, after painstaking, complete, general physical examination, accessible parts of the genital tract may be examined by sight and touch, and a culture taken from the uterus for subsequent bacteriological examination, and as a possible guide in treatment.

Observation of the lochia sometimes affords valuable diagnostic information: in infected cases it is sometimes increased in amount, partly bloody, partly purulent; and sometimes with high temperature the lochia may be diminished in amount, or even almost entirely suppressed. The odor of the lochia also gives evidence of diagnostic value: in the putrid type of endometritis the discharge is free and of very foul odor, and points to the invasion of the less virulent pyogenic cocci, the colon bacillus, or the putrefactive organisms; whereas in septic endometritis the lochia are scanty and with little, if any, odor, and point to the invasion of the more virulent streptococcus or staphylococcus or both.

In what has been said above the mind has had chiefly in

view the most common lesion, namely, endometritis; but the limits of puerperal infection vary from a slight local process on a perineal tear to one involving the entire genital tract; from a small, walled-off parametric focus, to a systemic infection, a rapidly advancing, often rapidly fatal septicæmia; these varying processes, which so often extend beyond the uterus, will be more fully referred to under the heading of infection.

(*c*) *Treatment.* — One hesitates to write on this subject in these days of rapidly changing opinion. But having still in mind the most common lesion, endometritis, and leaving for consideration elsewhere the extra-uterine and general manifestations of septic invasions, including those of the veins and urinary tract, it may be said that there is a growing opinion that all intra-uterine treatment is useless, if not positively harmful. No one would now think of curetting in septic endometritis, and thereby destroying such poor protective zone as may have been excited; rather would he seek to check the general invasion by measures to contract the uterus, by the administration of ergot and strychnia, and by the use of ice-bags, and to strengthen the resistance by general supportive treatment with perhaps alcohol, and especially by placing the patient in the open air. Vaginal or intra-uterine irrigations are especially to be deprecated: in this form of infection continued irrigation may spread the process and by trauma open new avenues of absorption. Even in the putrid form of endometritis, it is now believed by some that all intra-uterine treatment does more harm than good, and that the best results follow postural drainage, measures to contract the uterus, and supportive treatment in the open air. Others, however, still believe in the value of careful uterine cleansing by swabbing with hydrogen peroxide and irrigating with sterile water, and by loosely applied intra-uterine dressings of gauze saturated with 70 per cent alcohol. In all forms of infection the use of antipyretic drugs has ceased to meet approval, and fever is best reduced by cold sponging or fan baths. Hysterectomy, still favored by some, fails to merit general approval; and serum therapy, and even the use of autogenous vaccines, have rarely given aught but disappointing results.

Finally it may be said that puerperal infection is often self-limited, and recovery ensues under any treatment that is not injurious, or under no treatment at all: but it must also be said that virulent pyogenic infections, especially of the streptococcus, except when the host has a very high resistance, generally proceed to a rapidly fatal issue whatever treatment may be adopted.

In view of conflicting views of treatment, the writer would like to say that he stands with those who would invade the uterus only in the face of bleeding which is probably due to retained fœtal products, — placental débris or membranes. He has abandoned all forms of intra-uterine irrigation or medication, and for local antisepsis avails himself in some cases only of vaginal swabbing to remove blood clot and saprophytic infection of the lochia. He has also abandoned taking cultures from the presumably infected uterus, relying for diagnosis on the clinical picture, and temperature and pulse chart.

II

MALFORMATIONS AND DISPLACEMENTS

Of the various malformations of the female genitalia undiscovered and untreated in childhood and adolescence, there are few, not already referred to, which are liable to need medical attention during the period of maturity.

1. Malformations

(*a*) *Double Vagina*, partial or complete, rarely causes difficult coitus, and is often discovered only by accident. If the cervix is single and the vaginal septum is attached to the cervix in the median line, there may be delay in cervical dilatation in a first labor. Usually the septum causes no obstruction to fœtal descent in labor, but is more or less completely torn away: a firm septum may require incision.

(*b*) *Vaginal Atresias.* — Ring-like strictures of congenital origin, insufficiently complete to prevent the exit of menstrual flow and therefore not discovered before marriage, may impede coitus and sometimes give trouble in labor.

(*c*) *Malformations of the Uterus.* — Some of the anomalies in the fusion or development of the Müllerian ducts give rise to obstetric interest; some are discovered only when the abdomen is opened for any cause. If the uterus is double and there are two patent cervical ora, pregnancy may occur in one or both uteri, at the same time or at different times. Labor is usually normal, although the presence of the twin uterus may interfere with the contractions of the pregnant half. Labor in the uterus bicornis subseptus and in the uterus bicornis unicollis has been observed several times by the writer, and in each case it was essentially normal. Disaster may ensue, however, when pregnancy occurs in a rudimentary cornu of a double uterus, by the migration of the spermatozoön through the other uterus and tube to the fimbriae of the Fallopian tube entering the rudimentary horn. The result is essentially the same as an interstitial tubal pregnancy, and has the same clinical course and termination.

2. Displacements of the Uterus

(*a*) *Anteflexion* of the cervix, corpus, or both, is usually a congenital condition, and is most commonly recognized and treated in dealing with dysmenorrhœa and sterility. This displacement may be acquired, however, as a result of increased weight of the corpus from inflammatory process, neoplasms, or subinvolution. Especially is the double flexion due to inflammation involving the utero-sacral ligaments, the ultimate contraction of these ligaments not only drawing the uterus upward and backward, but causing a sharp flexion at the seat of their attachment near the internal os.

(*b*) *Anteversion*, even when marked, may give rise to no symptoms, unless possibly from undue pressure on the bladder. When due to chronic metritis, increased weight from neoplasms, or to inflammatory processes in the pelvis, the symptoms and treatment are naturally those of the pathological cause. It has already been stated that marked anteversion will give rise to dystocia; it is also true that this malposition is sometimes a cause of sterility, even when uncomplicated, on account of the misdirection of the uterine

canal, and of the inability of the uterus to erect itself and participate in the sexual orgasm.

(*c*) *Lateroversions and Lateroflexions*, as well as the various possible mal-locations of the uterus, are due to pressure by tumor or inflammatory mass or to traction by shrinking, organized exudate, or contracted ligaments. Normal function may be interfered with, but the symptoms are in the main due to the pathological cause, and treatment is indicated accordingly.

(*d*) *Retro-displacements.* — Backward displacements of the uterus, whether in the form of retroversion, retroflexion, or retrolocation without change of axis, are due to a great variety of causes, and are much the most frequent of all the mal-positions. The most common causes are undoubtedly those consequent on abortion and labor, whether due to injuries of the pelvic floor and relaxation of supporting structures, to subinvolution of uterus and vagina, ptosis, or coincident infection. Among nulliparous or unmarried women the cause may be found in pelvic tumors, congenital defects (short anterior vaginal wall, long cervix), pelvic peritonitis, or chronic inflammatory processes of the uterus and appendages. In all women, whether parous or not, retro-displacements may be due to relaxation of the normal supports in the atonic conditions of general poor health; to increased intra-abdominal pressure from any cause, such as straining at stool, persistent cough; to faulty dress; to persistent neglect of the bladder (the full bladder pushing the fundus backward); to long hours of work in continuous standing or sitting position; to falls, and to certain forms of exercise too strenuous for the average feminine physique.

Uncomplicated retro-displacements may give rise to no symptoms whatever; or they may be the cause of backache, a sense of pelvic weight and fulness, dysmenorrhœa, endometrial changes, menorrhagia, sterility, or abortion. When complicated, or caused by neoplasm or pelvic inflammation, the symptoms and treatment are those of the causal complications. If pregnancy occurs in a retroposed uterus and early abortion does not take place from unhealthy conditions of the endometrium and disturbed pelvic circulation, the

growing uterus may rise to its normal position in the abdomen, if not held in the pelvis by neoplasm or insurmountable adhesions; but when spontaneous replacement does not occur and the pregnant uterus becomes incarcerated, the dislocation of the uterus must be reduced by art, or grave obstetric consequences may result.

(*e*) *Prolapse of the Uterus.* — Descent of the uterus below its normal plane in the pelvis, except in the minor degree observed physiologically in the early months of pregnancy, or pathologically in cases of pelvic congestion or increased uterine weight from small myomata in the anterior wall or cervix, — except, in other words, in the frequently observed and often transitory "sagging" of the uterus, is accompanied by a corresponding retro-displacement. Indeed, the descending uterus must change the relation of its axis to the successive pelvic planes as the descending fœtus in its birth must conform to the ever changing curve of Carus. The causes of uterine prolapse are much the same as those of retro-displacement, and in the minor degrees of procidentia the symptoms are the same, perhaps somewhat exaggerated. But when the descent is such as to drag down the vaginal wall, that of the anterior wall usually involving the bladder and that of the posterior wall perhaps containing a pouch of the rectum, there is a considerable increase of pelvic distress, and disturbed function of bladder and rectum; indeed, apart from and because of the difficulty in emptying the cystocele, the residual urine may give rise to vesical irritability, cystitis, and a long train of nervous symptoms. When the uterus protrudes wholly or in part from the vulva, constituting with the cystocele and rectocele a genital hernia, there are usually added to earlier symptoms those resulting from erosions and ulcerative processes. Extreme degrees of genital hernia are promoted by declining strength and atrophic muscular change, and are therefore more often observed at the climacteric or in anility than during the period of maturity.

Pregnancy sometimes occurs in minor degrees of procidentia, and with increasing weight the cervix and a portion of the body of the uterus may protrude from the vulva.

If the uterus does not rise spontaneously, and become an abdominal organ, incarceration and abortion will naturally ensue. Usually, however, there is no difficulty in replacing and retaining the uterus, although the patient may have to be kept recumbent until after the fourth month.

(*f*) *Inversion of the Uterus.* — Acute inversion is an obstetrical phenomenon, and may be caused by vigorous efforts to express the placenta from a non-retracted uterus in the interval between contractions, or by attempts to withdraw the placenta by traction on the cord or by traction on the placenta itself while still partly adherent. It may occur in violent, precipitate labor, as a cow "casts her wethers", or when the child has an absolutely or relatively short funis with pathologic placental adhesion, or indeed when delivery is retarded by short funis and is effected with forceps. Shock, pain, and hæmorrhage are the natural symptoms. Inversion may be partial or complete: when complete, reposition is easily accomplished with manual taxis, if promptly done before contraction of the cervix; when incomplete it may escape diagnosis and become a chronic condition.

Chronic inversion, partial or complete, may be the result of undiscovered or unsuccessfully treated acute inversion, or it may gradually be developed by the efforts of the uterus to expel a polypoid myoma. The early gynæcologists exhausted their efforts in their endeavors to replace chronic inversion, sometimes succeeding by long-continued elastic pressure from below. Now replacement is comparatively easy by dilatation of the constricting cervix through an abdominal incision, with traction from above aided by taxis from below.

3. Splanchnoptosis

Finally, from the stretching of the abdominal musculature incident to pregnancy, from the pressure of improper corsets or other clothing, and from postural defects proceeding from these and from high-heeled shoes, there often may ensue prolapses of the abdominal viscera, exaggerating the symptoms of pelvic disease, and producing a variety of other symptoms, the treatment of which usually falls within the province of the gynæcologist.

III

INFECTIONS

The infections and consequent inflammations of the reproductive organs naturally find their fullest sway during the period of maturity. Aside from the favoring conditions of ill-health and diminished resistance common to all ages of women, the pelvic engorgement and physiological traumata of endometrial capillaries and Graafian follicles incident to menstruation and ovulation await only a pathogenic irritation to result in inflammation. The inevitable injuries to the mucosa and sometimes to the deeper structures of the genital tract in abortion and labor, invite infection, while retained secundines and blood-clot afford excellent culture media. Unhappily, too, during this period, a great predisposing cause of infection is to be found in sexual impurity.

Given the diminished resistance and potent predisposing cause, the exciting cause, the irritation, is ascribable to pathogenic bacterial organisms and their toxins, known and unknown. These organisms, introduced from without, by ascending infection may be diffused by traversing the continuous mucosa of the genital tract through the distributing agencies of the urethral, vulvo-vaginal, and cervical glands and crypts, to urethra, bladder and kidney, or to uterus, tube, ovary and peritoneum: or by lymph channel and bloodstream they may reach the parametrium, tube, peritoneum, and kidney, and perhaps by descending infection reach later the uterus or bladder. By descending infection also, from the tonsil, lungs, or kidney, infecting organisms may reach the pelvic organs. According to the nature of the infecting, irritating organism round cell tissue infiltration may be excited, which walls off and limits the inflammatory process, resulting in localized abscess formation and tissue destruction without serious menace to life, as a fire may destroy the contents of a room with fire-proof walls: familiar examples are observed in gonococcus infections of the pelvic organs, providentially roofed over by plastic adhesions, the general peritoneum escaping, but with functional destruction

of the essential organs of reproduction; and in the pyogenic infections of the parametrium, with frequent termination in pelvic abscess, and escape from general infection. Or the nature and virulence of the infecting organism may be such as to excite no adequate localized protective zone, and thus to result in a general conflagration, general diffusion, septicæmia, like fires in hay-barns and timber-framed structures: examples are to be seen in some puerperal streptococcus infections which pass lightly over the pelvic organs, sweep through the general peritoneum, and overwhelm the system with their toxins. If met by adequate systemic resistance, the toxins may be destroyed and eliminated, life may endure, and functional activity be restored; too often, however, systemic resistance and medical aid are alike inadequate, and life succumbs to irresistible assault. Or, again, septic phlebitis and thrombosis, by embolism, may carry infecting foci and pyæmic processes to distant organs, as wind-borne burning thatch may spread disaster to cottage colonies: septic embolic pneumonia, endocarditis, and discrete metastatic abscesses are examples of this type of puerperal infection. Mixed infections may distort and complicate these pictures, and result in composite clinical conditions.

The more common exciting causes of infection are the gonococcus, the pyogenic streptococcus and staphylococcus, the bacillus coli communis, and bacillus tuberculosis; the pneumococcus, though less common, is likely to be virulent in the pelvis as elsewhere; and sapræmic processes are attributable to saprophytic organisms as yet but little understood.

An adequate survey of the great subject of genito-urinary infection, puerperal and non-puerperal, would require the space of a text-book, and would be foreign to the present purpose of the writer. Nor can space profitably be used in a collection of case histories to outline the morbid anatomy and clinical phenomena of the pelvic organs by the anatomical classification shown on page 72; this work is well done in numerous modern text-books. It is to be remembered that infections of the genito-urinary organs, like most human troubles, seldom occur singly: the genital and the urinary

mucosae are continuous, and their portals are adjacent; so that the acute, gonococcal urethritis of today may later be seen as a vulvo-vaginal infection, retarded perhaps in the cervical glands; later still, perhaps, after a first labor or abortion, tubes, ovaries, and pelvic peritoneum may be successively infected. Again, a torn perineum infected with the Klebs-Löffler bacillus may be the way-station to systemic infection. Surely he who would hope to deal successfully with the protean manifestations of genito-urinary infection should have clearly before him the text-book pictures of localized pathological process; but he should also have the kaleidoscopic and the composite pictures.

IV

TRAUMATA

Adult woman is liable to all the genital traumata incident to falls and blows, and also to those of violent coitus. Such wounds and consequent open hæmorrhages from the abundant blood supply, and the hæmatomata from subcutaneous extravasation, are treated in accordance with general surgical principles. For the most part, however, the injuries of the genital tract are caused by parturition.

1. **Tears of the Vulva and Vagina,** when limited to the fourchette and mucous surfaces, are of importance chiefly as opening ready portals of infection. Mucous tension-tears sometimes involve the labia minora, which in forceps deliveries may be torn and severed from their normal attachment. Sometimes, also, either in forceps extractions, or in normal deliveries, effort to avoid posterior tears leads to undue forward pressure of the crowning head, and escape from the perineal Scylla ends in misfortune on the vestibular Charybdis. These tears of the vestibule are likely to result in hæmorrhage requiring suture. Mutilating tears of the labia minora should receive primary plastic repair; but it is essentially impossible to close multiple tears of the mucosa: reliance must be placed on rigid local antisepsis.

2. **Tears of the Vaginal Outlet and Pelvic Floor.** — Superficial tears of the base of the perineal triangle, or even deeper

CYSTOCELE

tears which do not involve the hymeneal ring, do not weaken the pelvic floor. Even when the anal sphincter is involved there may be no consequent procidentia of uterus or bladder. But when the perineal tear, whether deep or superficial, extends to either or both lateral vaginal sulci or indeed is central, and the levator ani and its fasciae are deeply involved, the pelvic sling is broken, and the essential support of the pelvic floor is weakened or destroyed. The visible perineum may be only slightly torn, yet the pelvic floor may be seriously impaired; and there may be multiple lesions of the levator without palpable or visible tears of the mucosa. Failure of normal involution of the vaginal wall still further weakens the supporting sling; the vaginal and anal openings fall backward, the weight normally borne by muscle and fascia falls on these openings, and retro-displacement and procidentia of the uterus, with associated cystocele and rectocele, naturally result. Reference has already been made to the ultimate effect in disturbance of bladder function; it should not be overlooked that the function of defæcation is more or less seriously impaired by the displacement of the lower rectum and its loss of muscular support. When the anal sphincter is torn through, incontinence of fæces and flatus is not the only unhappy result: the rectal mucosa is more or less exposed and there is often a constant, annoying, debilitating mucoid discharge; and the enforced seclusion from society and interference with accustomed activities not infrequently lead to melancholia and other forms of mental disturbance. Obviously all traumatisms of the pelvic floor, visible or palpable, should be discovered and repaired primarily, to close portals of infection, and to restore normal functions; but the impalpable, invisible, submucous traumata may not be recognized until consequent displacements of the uterus, bladder and rectum develop symptoms and are brought to medical attention. The secondary repair of injuries to the pelvic floor gives a large field for the plastic skill of specialized surgery.

3. **Lacerations of the Cervix** take place in nearly every first labor, and are sometimes observed as a result of abortion. Hurried and unskilful dilatation of the cervix in opera-

tions on the non-pregnant uterus may cause cervical rupture; and extensive laceration may ensue in the instrumental or manual dilatation of the *accouchement forcé*. The tears may be unilateral, bilateral, or multiple; they may be internal, extending not entirely through the wall, or complete, varying from the slight notch to the lesions involving the vaginal fornices, broad ligaments, or even the vesical and uterine walls. Extensive tears are not often due to spontaneous labor, although they may occur when labor is precipitate, or when the parturient, acting on ignorant lay advice, brings the abdominal muscles into vigorous action before the cervix is fully dilatable. Undoubtedly the most obvious tears are due to operative trauma. Even extensive tears, if uninfected, may heal and never give rise to symptoms, although cicatrices may interfere with subsequent dilatation and normal delivery. On the other hand, moderate tears afford far-reaching pathological possibilities: aside from what may result in parametric or even systemic infection, there may be eversion of the cervical mucosa, which under normal exposure and irritation by friction against the vaginal wall may give rise to increased secretion; the cervical and endocervical glands may be infected, the ducts may be occluded, and so-called cystic degeneration of the cervix may ensue; the scar tissue wedge may not only promote eversion of the torn lips, but by compression of sympathetic nerve ganglia and filaments cause reflex symptoms in distant organs; secondary hypertrophy of the cervix coupled with the frequently concomitant subinvolution of the uterus leads to uterine displacements; the endometrium often participates in the local infection and contributes to the increased vaginal discharge; the associated endometritis and subinvolution are frequent causes of disturbed menstrual function; while backache, dyspareunia, sterility, and abortion are often traceable to the complications of cervical laceration. Finally, carcinoma of the cervix is essentially always attributable to cervical injuries incident to child-bearing.

Deep laceration of the cervix, extending perhaps into the broad ligament and vaginal wall, often results in profuse hæmorrhage which must be controlled: hæmostasis may be

accomplished by firmly applied gauze pressure, but the application of sutures is more satisfactory; this is not a difficult procedure, for with double tenaculum forceps the torn cervix can easily be drawn down to sight. Indeed, when the cervix is thus drawn without the introitus, bleeding usually ceases, owing to the diminished lumen of the stretched anastomosing vessels, and the field is unobscured; moreover, if the attendant is unprepared to deal with the lesion, he can thus hold the hæmorrhage in check until assistance is summoned. In the absence of hæmorrhage primary suture is not generally thought advisable: in a majority of cases, if not infected, spontaneous healing occurs; and when adequate union does not take place, a more satisfactory plastic operation can be done later, if symptoms supervene.

The mere fact of cervical laceration is not in itself an indication for secondary operation; even in the presence of moderate eversion, erosion, or cystic degeneration, minor local treatment is often successful, and there is no serious complication or disturbance of function. Under these circumstances it is well to postpone the surgical repair, at least until the menopause, for the reason that on the one hand unskilful trachelorrhaphy may so far distort the cervix or unduly diminish its lumen that dysmenorrhœa or even sterility may result, or on the other, subsequent labor may again cause laceration. Generally, with perhaps occasional local treatment, the lesion may be left until the functional activity of the uterus is over. The same may be said of some other lesions of the pelvic organs, in the absence of noteworthy symptoms; the ship may often wisely be allowed to finish her voyage before she is placed in dry dock. On the other hand the danger of possible malignant neoplasm must ever be borne in mind; unrepaired torn cervices should be inspected from time to time, perhaps occasionally treated, and the skilled sight and touch can easily determine when it is necessary or judicious to resort to trachelorrhaphy or amputation.

4. Injuries of the Recto-vaginal and Vesico-utero-vaginal Septa. — These traumatisms may be the direct result of instrumental injury in labor, or they may ensue from pressure

necrosis: other causes of fistulae are to be found in chronic ulceration from syphilitic, tubercular, or malignant disease, or in rupture of pelvic abscesses. Recto-vaginal fistula is most often due to necrosis from long pressure on the septum between the arrested fœtal head and hard, scybalous rectal masses, — hence the teaching that the rectum should be emptied in the preparation for normal or instrumental delivery. Similarly, aside from operative trauma, the bladder wall may be perforated by necrosis from pressure between a long-arrested fœtal head and a full and perhaps procident bladder, or between the descending head and a vesical calculus. The ætiology suggests the prophylaxis. The surgical treatment of these distressing injuries calls for expert skill, especially in extensive destructions of the bladder septum. Sometimes, in women past the menopause, colpocleisis gives the best results.

Intra-peritoneal rupture of the bladder, and rupture of the uterus, as results of obstetric trauma, are rare accidents; but they terminate fatally unless promptly recognized and repaired.

5. Injuries of the Uterus. — The serious accident of rupture of the uterus may occur in pregnancy as a result of the arrest of the descending ovum in the interstitial part of the Fallopian tube, or in rare cases of pregnancy in a rudimentary horn of a double uterus. In the later months spontaneous rupture may occur when the uterine wall has been impaired by injury from curetting, by faulty development, or by myomectomy. Sometimes a Cæsarean scar is imperfect and yields to the distention of a subsequent pregnancy. More often, however, uterine rupture occurs in labor at term, either from unwise or unskilful operative intervention, or spontaneously in the presence of obstructive dystocia. In either event the rupture usually occurs in the passive thinned lower segment below the contraction ring, although it may extend into the broad ligaments or into the thickened wall of the working uterus above the contraction ring. Prophylaxis of this serious injury requires a thorough theoretic and clinical training in obstetrics; and the treatment of actual rupture calls for the skill and judgment of a well-trained

obstetric surgeon. Whether to open the abdomen or to depend on peritoneal vaginal drainage, whether to suture the uterine rent or to perform hysterectomy, must be determined by the surgical judgment of the responsible consultant.

Uterine injury not infrequently occurs by perforation, whether by tents or other dilating instruments, by sounds and curettes, and by placental forceps: sometimes loops of intestine prolapse through the rent and become strangulated. In the absence of infection and intestinal prolapse, these perforations may never be discovered, unless accidentally at subsequent abdominal section, or long afterwards on the autopsy table. When symptoms lead to early diagnosis, laparotomy affords the best opportunity for successful treatment.

V

NEOPLASMS

1. **Neoplasms of the Vulva** vary in importance from the common wart to carcinoma; but all new growths cause more or less discomfort and distress of mind, and are likely to demand treatment: reference will be made to those most frequently observed.

(*a*) *Papillomata, Condylomata.* — The common wart, usually of dark color, may be single or may be scattered over the mons and labia; the growth may have a broad base or may be pedunculated. These rarely cause physical symptoms, but are regarded as a cosmetic blemish. If not too large nor too numerous, they may be removed under local anæsthesia; their excision is often requested when general anæsthesia is necessary for some other purpose. The acuminate condylomata, or, as often called, venereal or gonorrhœal warts, are due to some irritating vaginal discharge, and while often associated with gonorrhœa are not necessarily attributable to that infection. They grow rapidly during pregnancy. They may be small and discrete, and scattered over the vulva and about the anus, or they may merge into large cauliflower masses; these masses are often moist, give rise to offensive discharge, and interfere with normal functions. Under these

circumstances excision under general anæsthesia is the best treatment. As previously mentioned removal during pregnancy is attended with some risk of abortion; but if allowed to remain until labor the fœtid discharge may prove a source of infection to the genital tract and to the infant's eyes. The flat, broad-based condyloma, or modified mucous patch of secondary syphilis, may be widely distributed over the vulva: it should be treated with cleanliness and local antisepsis during the administration of general treatment for secondary syphilis. Angioma urethrae, or urethral caruncle, mentioned as a neoplasm of adolescence, is a species of papillary growth and may first be observed in maturity as a cause of dyspareunia. It must be differentiated from polypi and prolapsed mucosa of the urethra. The growth is sensitive to pressure, and gives rise to pain in walking and modest sitting, and especially on urination. Excision is the most satisfactory treatment in the period of maturity.

(*b*) *Cysts of the Vulva.* — Retention cysts of Bartholin's gland are of not infrequent occurrence, due to some inflammatory obstruction of the duct, by no means necessarily attributable to venereal infection. They should be differentiated from labial hernia and hydrocele of the canal of Nuck. While not usually painful, they may cause annoyance. They may be treated by aspiration and subsequent injection of some irritant like iodine, as in hydrocele; or they may be enucleated and the cavity closed with sutures.

(*c*) *Lipomata and Fibro-myomata* are occasionally observed, developing from the connective tissues of the labia majora, and containing varying amounts of fat or bundles of muscular tissue respectively. They vary in size, and may become pedunculated. When large, surface friction may result in abrasion, infection, and ulceration. Excision is the natural treatment.

(*d*) *Carcinoma of the Vulva*, the most frequent form of vulval malignant disease, may occur during the period of maturity, although perhaps more often observed in later life. Beginning as a small nodule on one of the labia majora or in the intra-labial sulcus on one side, growth is slow or rapid according to the varying blood supply of old age or maturity.

CARCINOMA OF THE VULVA

Later come pain, ulceration, offensive discharge and metastasis to the inguinal glands. The growth may appear primarily in the clitoris or vestibule, and involve the urethra: the diagnosis is from lupus and syphilis. Early excision, before glandular metastasis, affords the only hope; when no longer operable, the ulcerating surfaces may be dressed with some one of the antiseptic dusting powders.

2. **Neoplasms of the Vagina.** — Cysts are the most frequently observed of the vaginal neoplasms; they vary in size from a walnut to a fœtal head, and consist of a fibrous sac with viscid, pale-yellow contents. The writer has observed chocolate colored contents, due, presumably, to the presence of blood. Cysts of the vaginal wall must be differentiated from vaginal hernia, emphysema, rectocele, cystocele, and urethrocele. The best treatment is excision, if the cyst is from the thicker portions of the vaginal wall; but if close to bladder, urethra, or rectum, it is wise to excise only the vaginal side of the cyst wall. Fibro-myomata of the vaginal wall, although of rare occurrence, sometimes claim attention, especially when they become pedunculated, and perhaps protrude from the vulva. They can hardly be confounded with either hernia or cyst. Enucleation or severance of pedicle is the rational treatment. Carcinoma is rarely primary in the vagina, but occurs by extension from uterus or rectum. Excision gives little hope of good ultimate result, unless by the radical method of Wertheim.

3. **Neoplasms of the Uterus** most frequently observed in the period of maturity are fibro-myoma, carcinoma of the corpus uteri, chorio-epithelioma, and sarcoma: carcinoma of the cervix, although observed both earlier and later, is more likely to occur during the climacteric.

(*a*) *Fibro-myomata.* — These growths, of unknown origin, play a large part in the life-history of adult womanhood. They seem to occur more frequently in nulliparae between thirty and forty and are surely less common in the multigravidous matron. Originating in the thicker, innermost muscular wall, they may grow outward and become subperitoneal, sessile or pedunculated, causing no symptoms unless those from uterine displacement, or they may develop

inward and become submucous or polypoid, giving rise to menorrhagia and irregular uterine hæmorrhages. They may be single, or more generally multiple. They may be small and result, in virgins, only in uterine displacement or menstrual disturbances: they may be large and cause serious pressure symptoms. They may prevent conception, cause abortion, or give rise to serious dystocia. Altogether, uterine fibroids, next to pelvic infections, may be regarded as the most frequent genital disturbance of the matron's health and happiness. It is nevertheless true that many fibroids are of such size and situation as to cause no symptoms. Degeneration may occur, but not so frequently as sometimes stated.

(*b*) *Carcinoma of the Corpus.* — This neoplasm may, of course, reach the uterine body by extension from the cervix; but the growth beginning in the corporeal endometrium will here be considered: it is usually of the type known as adeno-carcinoma. Unlike primary carcinoma of the cervix it progresses slowly, and consequently has a better chance of timely diagnosis and successful treatment. The early symptoms are essentially those of endometritis and disturbed menstrual function; and whenever in the latter years of maturity menorrhagia, irregular bleedings, great or small, watery uterine discharges, whether or not offensive, are not readily explained and relieved by minor treatment, the possibility of corporeal carcinoma should be thought of, and a diagnostic curettage should be performed. Indeed, it should be an invariable rule of practice to have all uterine scrapings, in whatever age of woman, subjected to conscientious microscopic examination; thus may unsuspected malignities be discovered and successfully treated. Chronic endometritis occurring in later life may simulate this form of new growth; but the microscopic findings are generally conclusive. Hysterectomy is the rational treatment of corporeal uterine carcinoma, and with timely diagnosis has a favorable prognosis.

(*c*) *Chorio-epithelioma* or *Deciduoma Malignum*, unlike adeno-carcinoma, is of rapid growth, early metastasis, and the most malignant of all uterine neoplasms. It is of fœtal origin, from the epithelial cells of the chorionic villi, and is characterized clinically by profuse, intermittent, but persis-

tent bleeding during the later weeks after abortion or delivery at full term: it is associated with, and sometimes follows, the cystic degeneration of the chorionic villi known as hydatidiform mole. Irregular and persisting puerperal hæmorrhages should always be investigated, and diagnostic curettage should establish the diagnosis: without timely discovery and hysterectomy, three-fourths of such cases are fatal within six months.

(*d*) *Sarcoma of the Uterus*, although of different histologic origin, has essentially the same clinical history as carcinoma. It may occur at any age, is not associated with child-bearing, and is more frequently observed in late maturity and during the climacteric period. It is one of the degenerative changes of myomata, and as such progresses rapidly. Early microscopic diagnosis and radical treatment afford the only hopeful prognosis.

4. Neoplasms of the Ovary. — The simple cystic tumors, follicular, corpus luteum, and tubo-ovarian cysts, are not true neoplasms; they are usually small, seldom cause serious symptoms, and seldom require operative treatment: in pelvic examinations they are to be differentiated from inflammatory tubal masses, tubal pregnancy, retroverted pregnant uterus, and pedunculated sub-serous uterine myomata. These cysts are often discovered in the course of abdominal operations, and are then very properly removed, with the preservation of normal ovarian structure as far as possible. The true cystic neoplasms are the proliferation cysts (cyst-adenomata) and dermoids. The former grow slowly or rapidly and often attain to large size, or did in earlier times before the days of early diagnosis and removal. The large cysts are to be differentiated from pregnancy (abdominal or uterine, the latter perhaps complicated with hydramnios), distended bladder, fibro-cysts of the uterus, ascites, obesity, tubercular peritonitis, and tumors of some abdominal organ: it is needless to say that correct diagnosis is not always made until the abdomen is opened. Rapid growth of a cyst should excite a suspicion of axial rotation. Simple dermoid cysts and the teratomata, although more commonly met with in the period of maturity, may occur at any time from childhood to old

age. Unlike adeno-cystomata the comparatively rare dermoids are of slow growth, seldom attain to large size, and may involve both ovaries; they are more often adherent, and therefore less often suffer axial rotation. Their cholesterin content is peculiarly irritating to the peritoneum, if ruptured during removal. There are no pathognomonic symptoms of ovarian cysts, and their disturbances vary according to their size and complications: the large tumors have decided pressure symptoms.

Solid tumors of the ovary are rare, and are difficult of diagnosis until the abdomen is opened.

Parovarian, or broad-ligament, cysts, whether simple or papillary, are not easily differentiated from ovarian cystomata, although they grow more rapidly, and from their confined position between the broad-ligament folds are likely to cause symptoms while small, and in the case of proliferating, papillary cysts, are often bilateral.

There is no room for conservatism in the presence of any of the forms of ovarian or parovarian cysts; whatever their probable histology, each has pathological possibilities, if not serious present symptomatology, and early removal is the wisest treatment.

The following cases will illustrate some of the many pathologic conditions of the period of maturity:

CASE XXXI

A woman of twenty-three, married for two years, but never pregnant, sought relief for her sterility. She felt certain that her husband had had no venereal disease, and stated that their marital relations had been in every way normal. She considered herself in perfect health; but in response to inquiry she said she had never menstruated.

Diagnosis. — On examination the external genitalia appeared normal; but the vagina, four inches in depth, ended in a cul-de-sac. No cervix could be seen or felt. Rectal exploration showed the pelvis to be empty, and revealed no trace of even rudimentary uterus or other internal genital organs. The condition was explained to the woman, and she was told that surgery could offer no help for her unfortunate situation.

Comment. — It should have been impossible for an intelligent adult woman, who had never menstruated, to marry without previously ascertaining the cause of her abnormality. To be sure, menstruation is not essential to fertility; and the writer recalls the case of a young lady who menstruated only at rare intervals, and who yet bore a family of children: she would become pregnant after months of amenorrhœa, and not know of her condition until informed by abdominal enlargement. Still, conception by women who seldom or never menstruate is so rare that no virgin should plight her troth in ignorance of the cause of any menstrual anomaly. This writing recalls the case of a young woman who came for the relief of sterility, and who had never menstruated: she had been married for seven years, and stated that there had been no difficulty in coitus. But there were no palpable mammae, and only rudimentary nipples; there was no sign whatever of a vagina, and coitus had evidently taken place by urethra and rectum; no uterus or appendages could be made out, and there was never any menstrual molimen or vicarious periodic loss of blood. Whatever may be the various divergent opinions of recent attempts to promote eugenics by law, and whatever may be the moral duty of men contemplating matrimony, common sense would seem to teach that

prior to her engagement every nubile young woman with any form of menstrual anomaly should submit herself to searching medical inquiry, and if necessary to physical examination.

Whether in cases of absence of uterus and its appendages transplantation procedures will ever make possible a successful grafting operation, remains for experimental surgery of the future to determine.

CASE XXXII

A pale, thin looking young woman of twenty-five comes for advice because of amenorrhœa. She had married at twenty-two, borne her first baby when twenty-three and a half, and had suckled the baby ever since: her mother had advised her to wean the baby when it was a year old; but she had kept on nursing because she wished not to get pregnant again so soon. She now felt weak and dragged. For several months the breast milk had diminished somewhat in amount, and the baby had been given two or three bottles to supplement this shortage. The young mother was now worried because her periods did not return.

Diagnosis. — Aside from general physical depression, examination revealed nothing wrong except in the pelvis: there were the usual minor traumata of labor; but the uterus, which must have been normally developed to permit conception and parturition, was now found to be notably smaller than normal, and measured only one and a half inches in depth. The condition was obviously one of hyperinvolution.

Treatment. — The young woman was informed that there was no specific treatment for her unfortunate condition, and she was referred to an internist to follow such dietetic and hygienic measures as would promote the general health and improve the nutrition: it was suggested that iron and arsenic might be serviceable. It was also pointed out that the bi-daily use of short, hot vaginal douches might advantageously bring more blood to the pelvis, and that with the return of normal health and appetite the physiological pelvic congestion produced by marital congress might be helpful in stimulating the uterus.

Comment. — There is no known pathology of this rare condition of hyperinvolution; but it is well known that early lactation produces the painful uterine contractions called after-pains, and in the older books putting the baby to the breast was a recommended means of stimulating the uterus to contract and thus control post-partum bleeding. It is therefore not unreasonable to suppose that unduly

prolonged lactation may push nature to overdoing the normal process of involution. The idea that woman is unlikely to conceive during lactation is an old one, but is held to this day among the unenlightened: experience has long since proved its fallacy.

CASE XXXIII

An unmarried lady of wealth and refinement, about forty years of age, comes from another State to seek advice on account of dysmenorrhœa and constipation which have troubled her for many years. She is of nervous temperament, and perhaps inclined to magnify her symptoms; but inquiry makes it clear that while the menstrual pain is not excruciating, it is severe enough to interfere with her activities and oftentimes to send her to bed. She further complains of dull pelvic pain at other than menstruation times, especially when she has been more than usually active. From her description the constipation appears not to be due to irregular habits, want of personal care, unsuitable diet, or insufficient water, but to some obstruction of the lower bowel which it takes straining to overcome. Aside from these complaints she is perfectly well.

Diagnosis. — The general examination disclosed nothing abnormal, and no disturbances of function. Vaginal examination showed a sharp retroflexion of the uterus, a tender mass on the left, the size of an English walnut, and a prolapsed and adherent right ovary. From the shape and subjective sensation on touch the small mass on the left was evidently the enlarged ovary.

Comment. — There was nothing in the history to show how or when the patient sustained the uterine flexion; of course it may have been congenital. The pressure of the fundus on the lower bowel seemed a likely explanation of the constipation. With the conditions found it was rather surprising that the patient's symptoms were not worse, and that there was not more pain in the cystic ovary. Pessary treatment did not seem wise in this case: retroflexion is much more difficult to deal with than uncomplicated retroversion; besides, the condition of the ovaries called for visual surgical treatment. Moreover, the patient wished to get well and go home, and could not remain for protracted care and occasional office visits: she therefore readily accepted the advice to submit to laparotomy.

Treatment. — By median incision the cystic left ovary was resected, the portion removed measuring 3.5 by 2.5 by 2 cm.; the remaining portion was closed in with buried sutures of fine catgut, which controlled oozing. The right ovary was freed of adhesions and left *in situ*, after pricking a number of small cysts. The uterus had no adhesions, and was easily raised and suspended to the anterior abdominal wall: the previously prolapsed right ovary was naturally raised when the uterus was replaced. On the uterine fundus was a small myoma, measuring 1 cm. in diameter: this was enucleated, and the bed closed in with catgut. The abdomen was closed without drainage.

Pathological Report. — Cystic ovary. Leiomyoma.

Result. — After a smooth convalescence the patient went home, from which she wrote that her next following period came at the regular time, but for one day was attended with hard pain. This pain was not where it had been formerly, in the centre, but on the left side, and was a sharper, different pain: constipation had disappeared. For several ensuing months this pain continued, gradually diminishing: it was much relieved by viburnum and sodium bromide. But a new pain appeared two or three months after the operation, located by the patient in the abdominal scar: the lady was assured that this would disappear in due time. Pelvic examination showed the uterus to be in normal axis: there was no tenderness on palpation. A year after operation the lady wrote, " I am perfectly well at all times; during my last two periods I have taken neither prescription " (viburnum and bromide) " and have been up and about exactly as usual, not even lying down at all".

Comment. — After resection and suture of an ovary there is not infrequently some pain for a time, especially at the menstrual epoch, and especially also in neurotic and hyperæsthetic women. The pain for several months at the site of the abdominal scar is worthy of consideration. It is obviously due to the pull of the uterus on its abdominal attachment. After ventral suspension the uterus is expected to sink lower and draw out a suspensory ligament of peritoneum and a few muscular fibres; and for this reason the uterus is

suspended somewhat above its normal position. In hyperæsthetic women this process is often considered painful: it is not usually noticed by women of phlegmatic type.

There is no doubt that cystic ovaries may cause more or less pain, especially in women of hypersensibility; and this pain is naturally intensified when the ovary is swollen at menstrual congestion. The case is recalled of a nurse, who finally had to give up her work on account of pain through the right lower quadrant. She was rested and studied; but no cause could be found for the pain. The abdomen was finally opened by the writer, and the right ovary was found to be slightly enlarged and cystic. The left ovary being evidently normal, this right ovary was removed: the right inguinal pain disappeared, and the nurse has been at work ever since, although she occasionally has to take rest periods on account of nervous exhaustion.

The partial resection of ovaries of course in no way impedes or otherwise interferes with ovulation; indeed it rather promotes it. A secundipara of twenty-four, after seven years of married life, was found to have a retroverted uterus and cystic ovaries: the uterus was suspended and both ovaries partly resected; and the woman bore her third baby just one year afterwards.

CASE XXXIV

A modest college graduate of twenty-four, who had been married a year, brings her husband to tell the history for her, the history being that for some reason coitus had been for the whole year of married life impossible, the husband explaining that he had never been able to penetrate. The young woman was very nervous, evidently made so by worriment about her conjugal disability: there was slight dysmenorrhœa, which she didn't mind, and constipation; but her one desire was to receive such treatment as would enable her to become pregnant.

Diagnosis. — The hymen was found to be thick and inelastic; there was a small central aperture (the so-called annular hymen), which with gentleness and care would barely admit the well-lubricated index finger: the introduced finger was tightly grasped by the vaginismic contraction of the constrictor muscles. For obvious reasons complete pelvic examination was not then made, but there was no other visible anomaly.

Treatment and Result. — A cleansing douche was prescribed, and the nerves mildly bromidized with ten-grain doses three times a day. Two weeks later, under general anæsthesia, the hymen was partly resected, and the cut edges overcast with fine catgut. The uterus was dilated and lightly curetted. In two weeks the parts had healed and become so far insensitive that two fingers could be introduced without vaginal spasm: the sodium bromide was continued. Two weeks later the introitus easily admitted two fingers without pain, and it was intimated that coitus might safely be attempted: word was soon sent that the act was normally accomplished. Four months later the young woman came complaining of painful breasts, abnormal cravings, and morning nausea: her period last due had failed to appear. There seemed to be no doubt of the diagnosis, and in due time her hopes were realized.

Comment. — Seemingly impervious hymens do not always require incision or resection, as the following case will show: a young minister and his bride come to Boston for their

honeymoon, and soon after appear with a matronly relative, who has been asked to communicate the fact that the young couple has found conjugal congress impossible. Inspection showed a small central hymeneal opening, and digital examination was not at first attempted; but with the help of local anæsthesia and diverting conversation a finger was easily introduced, and followed with the graduated Ferguson specula up to an inch and a half in diameter without causing pain. The young woman was not seen again; but information came that a year later she gave birth to her first child. Sometimes the hymen is sufficiently thin to permit coitus by invagination, even when the aperture is too small for penile penetration, — the small opening stretching sufficiently to permit insemination, much as the minute puncture in the dentist's rubber dam will stretch enough to encircle a tooth preparatory to filling. A young Scottish girl entered hospital for an elective Cæsarean section on account of a justo-minor pelvis: she also had what at first glance appeared to be an imperforate hymen; but a pinhole opening was discovered in the centre, and the hymen was quite thin. There was no complaint of imperfect coitus, and it was obvious that the hymen must have been pushed in, and the pinhole aperture enlarged, in the act of penetration. It is not to be forgotten, however, that insemination and conception may ensue without penetration. In the case of this Scottish lassie it was thought best to resect the hymen after the Cæsarean section, not only to permit normal coitus, but more particularly to provide for free lochial drainage: it would have been an awkward situation had the vagina filled with clots after delivery by hysterotomy.

CASE XXXV

An unhappy young wife of twenty-nine was referred by her physician for the relief of some difficulty in coitus. She had been married three years, but had never been pregnant; she was very nervous and ill-nourished, and was much below normal weight. The catamenia were regular and painless; but there was an annoying leucorrhœa, and coitus caused so much pain that she dreaded it, and had become nervously apprehensive at the thought of it. She acknowledged that she led too active a life and did not take rest enough; altogether she was very miserable.

Diagnosis. — It was found that the introitus would admit only one finger and that there was marked vaginismus: there was a subacute endocervicitis, and around the external os there were excoriations, the result of an irritating discharge; the uterus seemed otherwise normal and the appendages were neither tender nor enlarged.

Treatment and Result. — It was advised that coitus be not attempted for a time, and a regimen of daily life was laid down requiring certain periods of repose. A bi-daily weak lysol douche was prescribed, and the patient directed to report in a month. An attack of whooping cough kept the patient away for more than two months; but she had then made considerable general improvement, and was able to have the introitus stretched to admit two fingers: the vaginal discharge had markedly diminished. She was still very nervous, and sodium bromide was prescribed in ten-grain doses three times a day. Ten weeks later there was marked general improvement: the douche and the bromide were continued, and a tablet of iron, arsenic, and strychnia given. The following month showed continued improvement: the introitus readily admitted two fingers without causing vaginal spasm. It was then intimated that coitus might be resumed, and general tonic treatment was continued. The young woman was to pass the summer in the country, and report on her return. In the autumn she was in fine health, had good appetite and digestion, and had gained in weight: the leucorrhœal discharge, vaginismus,

and painful coitus had disappeared, and she was a very happy young wife. She conceived the following autumn, and was safely delivered the next summer.

Comment. — This simple case was not one which called for great acumen in the physician, and yet it needed judicious treatment: the physical findings were not such as to excite great professional interest, yet the marital happiness of two young people was at stake. Young physicians who would win success must be willing to take pains with what may seem to them trivial cases, and must remember that local treatment in minor gynæcological cases is often of far less importance than wise advice and general treatment; indeed the necessary local treatment is often trivial, as the following case illustrates. A young woman of twenty-seven had been married seven months, and came complaining of great distress over her connubial relationship: she had as yet developed no sexual desire, and coitus was very painful to her. It was learned on inquiry that the vulvo-vaginal glands poured out no lubricating fluid, as might be expected in a passionless woman; and furthermore the husband, not yet willing to accept the possibilities of paternity, used a condom.

Diagnosis. — As would naturally be expected from this history, examination showed the introitus and the entire vagina to be reddened and inflamed, and sore to the touch: there was a moderate leucorrhœa, but no evidence of gonococcus infection.

Treatment and Result. — The treatment consisted in three pieces of advice and one prescription; the latter was to take a bi-daily douche of weak warm lysol solution. The advice was: first, to restrict coitus to a reasonable frequency; second, to give up the use of the condom; third, to use a bland sterile lubricant at the introitus until such time as nature provided it. Three weeks later the conditions were much improved, and it was advised that the prescribed regimen be continued. Five months thereafter the young woman called to say that she thought she was two and a half months pregnant, and so she proved to be.

CASE XXXVI

A lady of thirty-two, accompanied by her husband, brings the story of a happy, but fruitless, wedlock of seven years: both have been in excellent health, and the only symptom of the wife is that for the last two or three years she has flowed a little more than formerly, and occasionally passes some small clots at menstruation, with some slight pain.

Diagnosis. — Examination fails to disclose any genital anomaly except this: the external os uteri was dilated to a diameter of half an inch, and lying within it, like a ball-valve, was what was apparently a pedunculated myoma. It was pointed out that this loose occlusion of the os might perhaps have effectually hindered intra-uterine insemination, but that perhaps there might be some endometrial condition which would require curettage. It was advised that the little polypus be removed and the result awaited before anything else was done.

Treatment. — The growth was drawn down, the pedicle cut, and the slight bleeding controlled with tincture of iodine.

Result. — It was fully expected that the lady would return after a month or two, for further observation and possible treatment; but time passed, and she was never seen again. Ten years later the gentleman was accidentally met on the street, accompanied by a little boy: stopping he said, "Doctor, allow me to present my son!" and then it was learned that conception had followed the period next after the removal of the myomatous polyp.

Comment. — The facts seem to warrant the inference that the *post-hoc* result can fairly be ascribed to the *propter-hoc* treatment, and may remind us that seemingly insignificant causes sometimes underlie momentous results.

CASE XXXVII

A vivacious and comely woman of twenty-nine years had been happily married three years without impregnation: she was in perfect physical condition, menstruated regularly and without pain, and saw no reason why she should not become pregnant; there was no suspicion of the husband.

Diagnosis. — The uterus seemed well developed, and there was perhaps a slight exaggeration of the normal anteflexion; the cervical canal was pervious to only a small probe: there was no other anomalous finding. If the motile spermatozoön can make its way through the bristle-sized passage of the interstitial part of the Fallopian tube, it would seem that it ought to pass a probe-sized cervical canal; but apparently for three years in this case it had not. Inquiry brought out the fact that the young woman had no sexual orgasm. Whatever may be the possibilities of the passage of the spermatozoön after coitus from the posterior vaginal fornix through the normal cervical canal, or even through a contracted lumen, many physiologists believe that fecundation is facilitated by the spasmodic erection of the uterus and opening of its canal during the sexual orgasm, and that when this orgasm fails to take place intra-uterine insemination is less likely to occur. If this belief is well founded, it would be rational to dilate the cervical canal in such cases, and in the present case the young woman was so advised.

Treatment and Result. — As the patient was unwilling that any of her numerous relatives should know anything of her plans and purposes, it was out of the question for her to enter a private hospital for operation; it was therefore arranged that she should submit to gradual dilatation, without anæsthesia, at office visits. Accordingly each month after the catamenia had ceased, and before coitus, graduated dilators were passed up to the limit of endurance: it took some six or eight months before the largest size of Hanks's dilators could be passed without pain. Thereafter the large dilator was passed each month before coitus, and, about a year after treatment was begun, conception took place, and in due time there was the hoped-for happy issue.

Comment. — It is far from the writer's intention to claim this as a *post hoc ergo propter hoc* result, whatever the patient may have done; the fact, however, remains. It should never be forgotten that in such procedures as gradual cervical dilatation in the physician's office strict asepsis should be observed, otherwise infection may forever blight the patient's hopes. We may or may not accomplish hoped-for results in such attempts, but the *nil noceri* doctrine must ever be borne in mind.

CASE XXXVIII

A lady thirty years of age sought advice for the relief of sterility: she had been happily married for two years to an estimable professional man; she was in excellent general health, except for an unexplained chronic diarrhœa; she menstruated regularly, and without pain: she mentioned that she had never had any sexual feeling. Physical examination showed the uterus to be somewhat enlarged and lower in the pelvis than normal, and there was an anteflexion of the uterine body; but no other anomaly was found: since there was no reason to suspect any defect on the part of the husband, a cervical dilatation and diagnostic curettage, with possible subsequent use of a pessary, were advised.

Treatment. — Under ether anæsthesia the uterine condition above noted was confirmed, and a thorough curettage was done; a large-sized, hollow, glass stem-pessary was placed in the uterus, and allowed to remain for ten days while the patient was in bed. The examination of the uterine scrapings showed nothing but a simple hyperplastic endometritis.

Result. — Three weeks later the young woman reported herself in excellent health, the chronic diarrhœa having disappeared. The menstrual period due next after the curettage did not appear, as it often does not. The uterus was found to be no longer somewhat procident, owing evidently to the diminished size and weight, and a pessary was thought unnecessary. Subsequently there were three normal menstruations, and when the patient was seen ten weeks after the last period there were characteristic breast changes, morning nausea, and the other findings of early pregnancy: on the predicted date an eight-pound boy was born normally after a labor lasting six hours.

Comment. — Whether the procident and anteflexed uterus was the cause of sterility in this case, or the condition of the endometrium, is not demonstrable; but probably the latter was the chief factor. Indeed, it is quite reasonable to suppose that impregnation had occurred from time to time during the two years of coverture, and that the fecundated

ovum, failing to find a healthy nidus, had been repeatedly cast off unawares. One thing appears certain, that the absence of sexual feeling was in this case not the cause of sterility, although it is probably true that conception is more likely to occur in women who have normal sexual sensations.

CASE XXXIX

A young wife, thirty years of age, had married at twenty-five, but as yet had never become pregnant. After nearly three years of unfruitful marriage she had submitted to dilatation and curettage of the uterus in a Boston hospital for the relief of dysmenorrhœa and sterility: there was temporary relief from menstrual pain; but pregnancy did not ensue.

Diagnosis. — The woman seemed in every respect in good health, except for painful menstruation. It was found that both corpus and cervix uteri were sharply anteflexed, and this condition seemed a reasonable cause of sterility: in view of this evident abnormality on the part of the wife, the potency of the husband was not questioned.

Treatment. — Under ether anæsthesia the cervix was dilated with some difficulty, as it was small and cartilaginous: curettage showed no endometrial changes. A hollow, glass intra-uterine stem was inserted and allowed to remain *in situ* for ten days while the patient remained in bed: she was sent home after a satisfactory convalescence.

Result. — The following month the catamenia lasted four days and there was no pain. Advice was given for general regimen during the coming summer, and the prospect of impregnation seemed hopeful. But four months later the woman reported herself in good health, with no dysmenorrhœa, but with no pregnancy. It was then insisted that the husband should submit to examination, and the following report was received: "The right testis is normal, the left slightly atrophied; examination of semen one and a half hours after coitus shows a watery, thin fluid with no live spermatozoa and very few dead ones."

Comment. — In thus subjecting a woman to surgical treatment without reasonable assurance of the husband's potency, one would be deserving of adverse criticism were it not that the treatment had in view the relief of dysmenorrhœa as well as sterility. As it proved, the woman was relieved from menstrual pain, and the minor operation was thus far justified; but the fact remains that unless the wife has

some lesion or condition which in itself calls for surgical treatment, the sexual condition of the husband should be ascertained before undertaking the treatment of an undemonstrated sterility in the wife. Where the husband is known to be sexually competent, success may be expected to result from treatment of the wife in a reasonable proportion of cases where sterility is apparently due to rigidity of the cervix and obstruction of the canal.

CASE XL

A young woman of nineteen sought advice, after a little over a year of married life, on account of dysmenorrhœa and sterility. It was pointed out that a woman of nineteen could hardly be called sterile after only a year of married life, especially as the ova of the early years of ovulation appear not to be as easily fertilizable as those matured in the full vigor of sexual life between twenty-five and thirty-seven. To this the young woman replied that a German girl, and she was born in Germany, considers herself sterile if her first baby is not born at the end of the first year of marriage; and she was urgent for treatment.

Diagnosis. — Pelvic examination revealed no anomaly except that the cervix was undeveloped and the os uteri smaller than normal. She had also had dysmenorrhœa, and in the absence of other apparent cause it was thought this symptom was attributable to the above-mentioned congenital condition.

Treatment. — After three months of medical treatment to improve the general condition, and to relieve constipation and headache, the cervix was fully dilated under ether, and a hollow, glass intra-uterine stem was inserted and left *in situ* for ten days, while the patient remained in bed. Menstruation occurred the following month, without much, but still with some, pain: the patient was kept under observation, and medical treatment of debility and constipation continued.

Result. — About five months after the cervical dilatation the catamenia failed to appear, and when next seen the young woman was seven months pregnant: she was duly delivered, two months later, of a living child.

Comment. — Perhaps the only justifiable comment on this case is that physicians should be cautious in ascribing ultimate results to their treatment of physical conditions, and it is certain that there is no demonstrable proof that conception in this case was due to the free cervical dilatation, — no proof that pregnancy would not have occurred without local treatment, — no proof that the result was not due,

largely, if not wholly, to the constitutional treatment. At all events the young woman obtained her heart's desire, and it is a fair statement that the writer has observed numerous cases in which dysmenorrhœa and sterility were apparently due to insufficient cervical lumen, and in which relief from both symptoms ensued upon the above-mentioned treatment.

Case XLI

A woman of twenty-four had been married only a year and a half, had never become pregnant, and was anxious for offspring. On account of dysmenorrhœa she had been in hospital several months previously, where she had had the uterus dilated and curetted with complete relief as regards menstrual pain.

Diagnosis. — No pelvic anomaly could be found to explain the sterility; but the woman was in poor general health, and in view of the fact that she had recently been curetted, it seemed wise to resort to general medical treatment and await events: regulation of the bowels and a course of tonics were enjoined, and the general health greatly improved. Finally as over two years elapsed without impregnation, the husband was induced to submit to examination, and the report thereon was this: "Mr. —— has had gonorrhœa, with remains in urethra; double epididymitis."

Comment. — Inasmuch as this woman had been married only eighteen months when first seen, it was by no means clear that she or her husband was sterile: it is often the case that even in the absence of all physical defects in both husband and wife two years or more elapse before the couple "find themselves". Authorities differ as to the proportion of cases in which sterile marriages are primarily due to the husband; but a conservative estimate would warrant the statement that in 25 per cent of sterile marriages the husband is the one at fault.

CASE XLII

A woman of twenty-eight had been married two and one-half years, and sought advice because she had never become pregnant. She belonged to the race which ranks sterility with leprosy, blindness, and abject poverty, as constituting the four great curses of humanity. She flowed generally with regularity, in normal amount, and seldom with pain: she seemed to be in all respects a healthy woman.

Diagnosis. — Physical examination showed the uterus to be a little below the normal plane, but otherwise no pelvic anomaly could be found.

Treatment. — No treatment for the present was advised, but it was strongly urged that the husband consult a recommended genito-urinary specialist.

Result. — A report was received from the genito-urinary specialist to this effect: "The husband is, without doubt, the one at fault; the testes are very small, and I think completely atrophied; the seminal specimen he brought me was practically zero in quantity and I could do nothing with it; he was unable to provide a further specimen, and he himself believes his incompetence to be complete."

Comment. — Nothing further has been seen of this case; but it illustrates very well the fact that sterility is not infrequently attributable to incompetence of the husband, and emphasizes the rule that especially in the absence of obvious pathological conditions, no surgical treatment should be inflicted on a woman for the relief of sterility, unless it shall be known that she alone is at fault.

CASE XLIII

A woman of twenty-nine, after five years of married life, without impregnation, sought advice for sterility: she had suffered from menstrual pain since her marriage; but like many other women she bore this affliction, and was led to seek medical aid by unsatisfied instinct for maternity.

Diagnosis. — The woman was only four feet six inches in height, and was very fat: pelvic examination revealed no anomaly, except that the cervical canal was smaller than normal.

Treatment. — No local treatment was advised; but in view of the well-known fact that in very fat women there is often a diminished ovarian activity, a regimen was prescribed with a view to reduction of fat, and it was advised that the husband consult a recommended genito-urinary specialist. The woman reported seven months later that she had lost seventeen pounds in weight, and was in greatly improved general health; but the husband had not seen fit to present himself for examination. Two months later the husband's hesitancy seems to have been overcome, and the following report was received: " This man gives a history of a double epididymitis years ago; he has no spermatozoa, living or dead, and is quite sterile."

Comment. — A dilatation of the uterine canal in this case might have relieved dysmenorrhœa, at least temporarily; but obviously it would have had no effect in promoting the wife's fertility: the only rational treatment in such a case would be a vaso-anastomosis in the husband.

CASE XLIV

A lady aged twenty-seven first came under the writer's observation just prior to her first labor. She was a fine specimen of womanhood, well developed, accustomed to long walks, and, with the single exception to be mentioned presently, in robust general health. Early in her pregnancy, in place of the morning nausea and vomiting so commonly observed at this time, she began to be troubled with salivation. This symptom gradually increased in severity, interfering with her comfort by day, but especially disturbing her at night. In fact, the flow of saliva finally became so profuse at night that the patient dared not lie down for fear of choking, but sat bolstered up in bed with a towel placed to receive the saliva. She was thus able to sleep but little, although towards morning the flow diminished somewhat, and she was enabled to sleep for two or three hours. In spite of the loss of sleep, however, the general health continued good, and the appetite was unaffected. The submaxillary glands were markedly enlarged and the contour of the face thereby distorted; the eyes, too, were somewhat heavy from loss of sleep, but otherwise the patient looked as well as usual.

During all this time the lady had been under the care of a well-known and able physician, who had tried all the drugs recommended for excessive salivation without appreciable effect. The patient said she had received more than a dozen prescriptions. It did not therefore seem worth while to attempt any further treatment. The urine was found to be markedly diminished in amount, without other abnormality, however. This diminution was undoubtedly due to the great derivation of water through the salivary glands, and the free use of Apollinaris or lithia water was advised, which increased the amount of urine somewhat. The labor was in no way remarkable: the os uteri was fully dilatable after twenty hours of first-stage labor; but the head did not descend, and after two hours of fruitless maternal effort a ten-pound girl was delivered with high forceps and axis-traction rods. During the next three days salivation occurred two or three times, the flow lasting only a few minutes;

it did not appear after the third day, when lactation was fully established; from this time the convalescence progressed normally, and mother and child were discharged well.

Two years later this patient became pregnant again, and at the end of the second month salivation began again as in the first pregnancy: there was no morning sickness. By the fifth month the flow of saliva had become so excessive as to cause great discomfort and loss of sleep; but, as before, the general health continued good. In view of her former experience, the patient was indisposed to submit to drug treatment, especially as no assurance could be offered that any treatment would prove effectual. As before, lithia water was found to be the most refreshing drink for the swollen gums and oral mucous membrane. Labor began just 280 days from the first coitus after the last menstrual period, and with the invasion of labor pains salivation ceased. The labor was uneventful, except that as before it was necessary to deliver with high forceps, the child, a boy, weighing ten pounds. On the second day there was some return of salivation, and with the establishment of lactation the salivary flow did not cease, as in the former pregnancy; on the contrary, it continued for two weeks more or less profuse, never absent for an entire day, and sometimes sufficient in amount to cause vomiting when the patient was recumbent. After two weeks the flow gradually diminished in amount; but it did not cease altogether until the end of three months. Aside from this discomfort the convalescence was normal, and mother and child were discharged well.

Comment. — The writer has met with but one other case* of excessive salivation in pregnancy, and that was thirty-eight years ago, when he was a medical student: his expe-

* This case was assigned to the writer's charge in 1877 by the Obstetrical Department of the Harvard Medical School. Prof. William L. Richardson, at that time instructor in clinical obstetrics, was summoned to his assistance, and delivered with forceps a face presentation, M.D.P. He recognized the patient as one whom he had been treating for salivation in the out-patient department of the Massachusetts General Hospital, and who was also affected with excessive ptyalism in her former pregnancy. In this case salivation ceased within half an hour after delivery. Dr. Richardson's report of this interesting case may be found in the Boston Medical and Surgical Journal for July 12, 1877.

rience is therefore that of others, that excessive ptyalism of pregnancy is a very rare affection. Winckel, in his text-book of midwifery, says that salivation is mostly associated with extreme nausea and vomiting; but these latter symptoms were absent both in Dr. Richardson's case and in the writer's. The disorder is probably a reflex neurosis, like many of the cases of uncontrollable nausea and vomiting. The amount of the salivary flow in twenty-four hours may reach several quarts and seriously impair the general health. In some cases of ptyalism, as in some cases of nausea and vomiting, the disorder may cease spontaneously in the fourth or fifth month; in others, as we have seen, it may continue throughout pregnancy, and cease soon after the birth of the child or on the establishment of lactation. Charpentier mentions seven cases in which ptyalism began with the pregnancy (as in Richardson's case), and persisted after delivery, once fifteen days, once eighteen days, twice for two or three weeks, and three times in the same woman for from three to four months.

In regard to the treatment of this affection, while many drugs are recommended by various writers, reliance can be placed upon none. Galabin truly says that pregnancy salivation "is apt to resist remedies". Astringent mouth washes of tannin or quassia may palliate, but cannot be expected to cure. Charpentier recommends the frequent use of brandy as a gargle, and the keeping in the mouth of small pieces of dry, bitter, orange peel. Other recommended remedies are pilocarpin (perhaps on the *similia similibus* theory), iodide of potash, fluid extract of viburnum prunifolium, belladonna, and atropia, the latter being best used by hypodermic injection near the affected glands. But if the affection is a reflex neurosis, it would seem that nerve sedatives would hold out most promise of successful results. Schramm is said to have cured a case in 1886 with bromide of potash, after the iodide and pilocarpin had both failed; but Richardson used the bromides in his case without apparent effect. If the writer were to meet with another case, however, he would place most reliance on atropine, and on large doses of bromides and chloral hydrate exhibited preferably by rectum.

CASE XLV

A woman of thirty-five, of questionable social status, entered the Boston Lying-in Hospital on January 31, supposing herself nearly at term. She had had four miscarriages at three to four months, all self-induced with a meat skewer, used in each case seven or eight times: she had never felt any ill effects, and had never intermitted her work, that of a waitress. She had typhoid-pneumonia at the age of fourteen, but had been well thereafter up to the last two years; during these two years she had noticed swelling of the ankles, and shortness of breath on exertion: at the time of admission she complained of continuous frontal headache, cough, shortness of breath, and swelling of the ankles and legs.

Diagnosis. — She was a large, well-developed woman: her respirations were short and wheezy: there was moderate œdema of face, hands, legs, and ankles. The skin was dry, the mucous membranes of good color. The lungs were negative, except for many coarse moist, and sonorous dry, râles scattered over the whole chest: there was cough without sputum. The heart apex was in the fifth left interspace, four and three-fourths inches from mid-sternum: the left border of cardiac dulness was five and one-fourth inches from mid-sternum, the right border one-fourth inch from right sternal border: the sounds were clear, the action regular: the pulmonic second, somewhat accentuated: there was a loud systolic murmur with first sound at apex, transmitted into axilla. The pulses were synchronous and equal, of good volume: the blood pressure was 170. The urine had a specific gravity of 1.030: there was $\frac{1}{8}$ to $\frac{1}{4}$ per cent of albumin. The pelvic measurements were normal: the presentation was O. D. P.; the fœtal heart, 132; labor had not begun, indeed the pregnancy was apparently not more than eight months advanced. In addition to the cardiac enlargement and mitral insufficiency, the headache, œdema, albuminuria, and increased blood-pressure pointed to a pregnancy toxæmia.

Treatment and Result. — Rest in bed, a hot pack during the first day, an ice-cap to the head, magnesium sulphate, two doses of morphia, and a milk diet soon caused relief, and as the œdema subsided forced fluids were added, and small doses of digipuratum. Improvement was gradual, and on March 4th compensation was well re-established, the œdema and toxæmic symptoms had disappeared, and the patient was allowed to be up and about the ward. It was not intended that the woman should be subjected to the strain of the second stage, but should be delivered as soon as she should have completed the first stage of her primiparous labor. But on March 8th her labor began; and as she made no statement or complaint, the fact was not discovered until the head was on the perineum, and she speedily delivered herself, without apparent straining, of a living baby weighing six pounds and seven ounces: the whole length of the labor was calculated to have been four hours and fifty minutes. During the short part of her labor that was observed, there was no sign of cardiac or respiratory embarrassment. On the seventh day the baby had slight hæmorrhages from mouth, nose, and anus, but recovered from the hæmorrhagic disease without treatment. The mother's convalescence was in all respects normal, and she nursed the baby. The woman was discharged on the nineteenth day, with her well-compensated mitral lesion.

Comment. — Of course not all cases of broken compensation will prove so amenable to treatment; but if suitable care can be afforded during pregnancy, most cases of mitral lesion can safely be carried to full term: aortic lesions are much the more serious, and are more likely to come to therapeutic abortion. The case comes to mind of a young secundigravida, who was sent in to the hospital for the induction of premature labor: she had a mitral regurgitant murmur, with orthopnœa and cyanosis, and was five weeks short of full term. In her tenement home it was impossible for her to receive suitable care; but in hospital, under rest in bed, small doses of digitalis, and judicious general treatment, compensation was restored and she was able to be out of bed for a week before the incidence of labor. Here, again,

it was not intended that the patient should suffer the strain of the second stage; but she had such a rapid labor, without cardiac embarrassment, that no intervention was thought necessary. She made a normal convalescence, nursed her baby, and went home with well-established compensation.

CASE XLVI

A secundigravida of twenty-four, whose first pregnancy and labor had been normal, came under the writer's observation on March 10th: she was then within a month of full term. For ten weeks she had suffered with œdema and dyspnœa under the care of her family physician.

Diagnosis. — The apex was felt in the sixth left interspace, just outside the nipple line: the left border dulness was 2 cm. to the left of the nipple, the right border dulness at the right sternal edge. A systolic murmur was heard at the apex, transmitted over the præcordia and into the axilla. There was a præsystolic murmur, heard at the apex and fourth left interspace. The lungs were normal, except for a few fine moist râles at both bases behind.

Treatment and Result. — In spite of the cardiac symptoms and respiratory embarrassment, it was decided to endeavor to restore compensation and to carry the case to full term. Under rest in bed and general medical treatment, with five minim doses of tincture of digitalis four times a day, there was rapid improvement: the lungs cleared, œdema disappeared, and respiration became normal. On April 9th the woman took in labor, and under close observation delivered herself normally of a six-pound-thirteen-ounce baby in seven hours. The convalescence was quite uneventful, there was no further break in compensation, and the mother was discharged without cardiac symptoms.

Comment. — In contrast with this case may be placed that of a quintigravida, who was seen in consultation when she was about three months pregnant. As an apparent result of her cardiac enlargement and mitral disease, aggravated, doubtless, by overwork, she was in a critical condition with general œdema and ascites, embarrassed respiration with cyanosis, feeble pulse, and mental hebetude. It seemed impossible that pregnancy could continue with safety; and yet it was feared that the shock of rapid therapeutic abortion could not wisely be imposed on the feeble heart. It was therefore decided to pursue a course of medical treatment in the hope of restoring compensation and reducing the œdema.

In three weeks, under dietary and eliminative treatment, with digitalis and strychnia, the condition was so far improved that the patient could breathe lying down, and the œdema was much diminished. It then seemed best to induce abortion, as it was incredible that the heart could sustain the demands of a pregnancy yet to last five months. The induction was carried out without anæsthesia, by the introduction of intra-cervical and vaginal gauze; and the uterus emptied itself spontaneously under the instigation of the gauze distention. Thereafter, improvement was rapid, and in three weeks the patient was free from œdema, and compensation was well restored.

In some cases, when pregnancy is farther advanced, but not yet within the period of fœtal viability, medical treatment can ameliorate symptoms and improve the general condition until perhaps the thirtieth week, when labor can safely be induced, the premature fœtus saved, and the woman thus spared the strain of continued pregnancy and full-term labor.

It has seemed to the writer that most internists and not a few gynæcologists fail to realize the possibilities, within limits of safety, of remedial medical care in the cardiac complications of pregnancy, and are too prone to resort to therapeutic abortion without due regard for the sanctity of fœtal life. While realizing that in rare cases maternal life can be saved only by terminating pregnancy in the face of cardiac insufficiency, he thinks experience has taught him that in most such cases, judicious medical treatment will generally carry the patient with safety to full term, or at least to fœtal viability, that at all events a conscientious attempt should be made thus to save the pregnancy. Obviously the best results are secured when the gravida with an impaired cardiac function is under observation from the beginning of pregnancy; thus the incidence of broken compensation may often be prevented. But even if a case is not seen until the appearance of symptoms, success will generally reward the judicious treatment of the willing, co-operating patient who wishes to save her baby.

CASE XLVII

A country clergyman's wife, aged thirty-two, had had one normal pregnancy and normal full-term labor. Two years thereafter she became pregnant again: in contrast with her experience in her first pregnancy she began to have nausea and vomiting, and when a month advanced these symptoms had become persistent. When a little over three months along she was brought to a general hospital in Boston, and for a week was under the care of a distinguished internist: she was given nutrient enemata, morphia gr. $\frac{1}{4}$ and strychnia gr. $\frac{1}{30}$ subcutaneously three times a day; but she made no improvement, lost weight and strength, the pulse grew poorer in quality, and finally she became delirious: she was then referred to the Boston Lying-in Hospital with the recommendation that the uterus be emptied.

Diagnosis. — On admission, the patient was much emaciated, the eyes were sunken, the cheeks flushed; the lips were dry, swollen, and fissured; the tongue was dry, cracked, swollen, and thickly coated; the teeth were sordid, the breath foul; the pulse was 120, of poor quality; there was persistent offensive diarrhœa; the uterus was enlarged to about three and a half months, and was not retroverted or incarcerated. She was obviously deeply toxæmic, and it seemed clear that she would be unlikely to survive the shock of induced abortion. It was therefore decided to endeavor to bring about some improvement before emptying the uterus.

Treatment and Result. — First the bowels were freely moved, to sweep away the offensive fæcal contents, and then copious colonic irrigations of hot, normal saline solution were given three times a day: when the diarrhœa was no longer offensive it was checked with paregoric. Occasional small doses of morphia were given subcutaneously, to control restlessness, and strychnia was given by mouth three times a day. The patient was given by mouth iced water, shaved ice and brandy, and milk with lime water, all in teaspoonful doses, — the milk and water frequently, the shaved ice and brandy every three hours. This dosage was continuously increased: for several days the patient vomited a little once

a day, otherwise the liquids taken by mouth were retained. In a few days ice-cream and ginger ale were added to the dietary. The delirium at night gradually disappeared, and in five days after admission the general condition had distinctly improved: all idea of emptying the uterus was given up, and from this time the patient gained steadily. Diet was increased and medication omitted gradually. The patient began to sit up on the sixteenth day; and eight days later, when she was well enough to go home, she had begun to feel fœtal motion.

Ultimate Result. — It was learned in due time that this lady had gone to term, and had borne a living child.

Comment. — This case was dealt with some years ago before it was customary to take the blood-pressure, and to depend much on the laboratory study of the excretions: the study of the general symptomatology, and close observation of the pulse and of the patient's general appearance served to guide the treatment. It was not so frequently thought necessary in those days to empty the uterus.

This was the first case in which the writer made use of colonic irrigation with saline solution: the procedure has since proved of great value in the treatment of pregnancy toxæmias, not only for intestinal cleansing, but for providing adequate fluid for washing the blood through the action of the skin and kidneys.

In this case the fœtus survived the maternal toxæmia. In many cases the ovum is blighted, and is found to have perished in some of the cases in which it seems necessary to empty the uterus.

CASE XLVIII

A lady of forty-one, the wife of a professional man for twelve years, had her first pregnancy ten years prior to the writer's knowledge of her. She was evidently very toxæmic throughout, and suffered so much with vomiting and œdema that therapeutic abortion was at one time advised. A strong desire for offspring led to the rejection of this advice, and the lady succeeded in reaching full term, only to be disappointed with a stillborn baby, owing to what was believed to be unskilful obstetric care. Since then her health had not been good, and she had been much troubled with "bilious attacks", constipation, and occasional slight jaundice. Much as she desired children she had feared to become pregnant, dreading the incidence of another toxæmia; but when she had reached forty-one, the strong maternal instinct led her to try again before it was too late.

When pregnancy had advanced to one month she began to vomit: for a month she was under the care of an excellent family physician, whose treatment was painstaking and judicious: for the past nine days she had been on rectal feeding; but the vomiting had continued, and the vomitus was generally bile-stained. The writer saw her in consultation when pregnancy was at two months. She was much emaciated; the tongue was heavily coated, the breath foul; there was some jaundice. The urine was scanty and high colored; 1.036; albumin, a trace. The pulse was 108, the temperature normal.

Treatment and Result. — Constant rectal saline seepage was begun, and a nutrient enema was given every eight hours; yet after three days the 24-hour amount of urine was only 16 oz.: the ammonia coefficient was 10 per cent. Four days later the patient began to take liquid nourishment by mouth: it was well tolerated, and for a few days there was no further vomiting; but there was great physical weakness, and the patient was much depressed mentally; the pulse, too, was becoming more rapid. It seemed impossible to allow the pregnancy to continue; but both husband and wife hated to abandon the hope of offspring. A week later the pulse

had risen to 120, and vision had so far gone as to appreciate only light and darkness: consent was then given for therapeutic abortion. Under ether anæsthesia the ovum was removed, and the uterus curetted. The convalescence, under the care of the family physician, was rapid and satisfactory: normal vision soon returned, metabolic processes apparently were restored, and the patient was reported to be well. Met by the consultant socially a year later, the lady had regained her flesh, strength, and normal activity, and looked the picture of health.

Comment. — This case was one in which liver-cell necrosis seemed to predominate over renal insufficiency. This type of case often ends fatally, even after the uterus has been emptied, as is seen also in the toxæmias with convulsions late in pregnancy, when due to hepatic insufficiency. Of whichever type, these cases are always grave, and cause great anxiety, especially when the advice of therapeutic abortion is rejected. The case is recalled of a young primigravida who early in the third month was deeply toxæmic, and vomited incessantly. Coming under the writer's hospital care at that time, at first she improved under saline rectal seepage and nutrient enemata; but the gain was soon lost, and the ammonia coefficient began steadily to rise. Induction of abortion was advised, and indeed urged, as affording the only hope of recovery; but this advice was rejected by the family, in accordance with the doctrine of their Church. Starvation proceeded to a degree that the ammonia coefficient reached 22 per cent, and death ensued from asthenia.

The Toxæmias of Pregnancy with Convulsions

(*Note.* — The subject of toxæmia of pregnancy culminating in convulsions, or what is commonly known as eclampsia, can hardly be well illustrated with two or three cases. The ætiology is as yet undetermined; and there is a difference of opinion as to treatment: indeed, the severity and diversity of symptoms and conditions are such that there can be no treatment laid down as applicable to all cases alike, each case must be studied and treated by itself. It therefore seems to the writer that it may be more helpful for him to give a

series of cases, and to precede them with a statement of the general principles on which they were treated.)

For some time it has seemed to the writer that in this impatient surgical age there is a too prevalent tendency, in the presence of the gravest obstetrical emergency generally known as, but inadvisably named, eclampsia, to proceed too hastily to forced delivery, whether the convulsions first occur before or during labor. Since it is now generally accepted that the ovum or fœtus is the source of the toxins, the effects of which so often culminate in convulsions before, during, or after delivery, and since the death of the fœtus *in utero* often is followed by an abatement of the convulsive seizures, it would seem logical to proceed to empty the uterus as the first step in the treatment. But whether the toxins are of fœtal origin or, as seems to the writer more probable, whether they are the product of imperfect maternal metabolism and non-elimination of waste products, the fact remains that the toxæmic woman is ill-prepared to resist the shock and trauma of any surgical procedure. Except in the presence of grave surgical emergency, such as fulminating appendicitis or serious bodily injury, no surgeon would operate on a patient with alcoholic toxæmia, nor does the internist look to see the chronic alcoholic survive the supervening toxins of grave general infection, such as pneumonia. Save in exceptional cases, therefore, it would seem more logical to postpone active surgical treatment for a reasonable time, until by active eliminative measures the toxæmic gravida is better prepared to withstand the added strain of delivery; and the writer believes that when the shock and trauma of the *accouchement forcé* are hastily imposed upon a nervous system already reacting to toxæmic irritation, the *coup de grâce* is not infrequently given to women who under more conservative treatment might recover. Moreover, under successfully applied eliminative therapeusis, the cervix and lower uterine segment often soften and expand to a degree that the woman speedily delivers herself under the usually exaggerated uterine contractions of the convulsive attack, or sufficiently to permit delivery without undue shock or injury. After the cervix is softened and somewhat dilated,

it is not difficult to procure by digital dilatation a sufficient expansion for the delivery of the small, non-viable fœtus, making use of embryotomy, if necessary; and when the fœtus is developed to a viable age and is alive, the use of a suitable hydrostatic rubber bag very generally results in a dilatation sufficient to permit safe delivery by forceps or podalic version.

Whatever the obstetric treatment may be, the fœtal mortality is high, even 50 per cent. In 40 cases, recently quoted by Hirst, in which abdominal Cæsarean section was performed for maternal toxæmic convulsions, there were 18 fœtal deaths; and yet this method of delivery would seem to afford the best fœtal prognosis. The fact is, of course, that the fœtus very generally participates in the maternal toxæmia, and even if viable, as it often is not, and delivered alive, it frequently succumbs for that reason, and even exhibits typical toxæmic convulsions. Moreover, as is well known, the premature baby does not well endure the strain of operative delivery, and even after instrumental cervical dilatation or vaginal Cæsarean section, delivery must be effected by operative procedure. Under these circumstances it would seem that in deciding upon the line of treatment to be pursued in a given case, that which affords the best prognosis for the mother should be chosen, since that which is best for the mother is generally best for the child. An exception might be made in the case of the late primigravida, nearly at term with living baby, but with undistensible cervix and vaginal tract; in such a case, in which great parental desire may justify the possibly increased maternal risk, abdominal Cæsarean section undoubtedly affords a better prognosis for the baby than strenuous delivery by the genital tract; but the safely delivered Cæsarean baby may subsequently succumb to its toxæmic condition.

If in reasonable time the patient fails to respond to eliminative treatment and to other medical measures for the control of convulsions and the reduction of blood-pressure, if there is deep coma, cyanosis, and pulmonary œdema, resort in desperation is naturally had to emptying the uterus, by forced cervical dilatation or by vaginal Cæsarean section; in such

cases, however, whatever the treatment, there is usually a lethal termination. But it has seemed to the writer that in many cases eliminative treatment fails because it is not sufficiently vigorous and persevering, and perhaps because it requires a much more exacting and protracted personal attention of the physician than does the rapid evacuation of the uterus.

The method of treatment employed by the writer is essentially as follows: First of all is given a high compound enema consisting of

Oil of turpentine	1 dram
Extract of aloes	20 grains
The white of one egg	
Sulphate of magnesium	2 ounces
Glycerine	2 ounces
Water	2 ounces

Next, the patient is given, when feasible, and it is generally feasible in hospitals, a hot-water immersion bath. Immersion needs not generally to be continued for more than a few minutes before perspiration appears on the forehead. If the patient is visibly dirty, or if sweating does not soon occur, the use of a flesh brush will promote the activity of the skin. If the pulse is weak, a stimulant is indicated before the bath. The woman is then rolled in a blanket, placed in a warmed bed, laid on a rubber blanket covered with a sheet, and another rubber blanket is spread over the extra blankets which cover her. It is well to remember that this treatment not infrequently serves to induce labor; but in the presence of convulsions the invasion of labor is to be welcomed. If the immersion bath is not available, the hot, wet pack is made use of; dry heat is much favored by some clinicians. An ice-bag is applied to the head. If the patient is comatose, the stomach is washed out, and there is left therein a moderate amount of water, perhaps 8 ounces, containing two ounces of Epsom salts or a like amount of castor oil, with two drops of Croton oil; if conscious, the patient can swallow the cathartic. In the presence of marked œdema it is not well to give much water at first; otherwise the conscious patient should be

caused to drink freely, and bitartrate or acetate of potassium may be given to neutralize acidosis. Fluid in the form of salt solution should be given to the unconscious patient, one or two pints under the breasts, in the face of free diaphoresis and purgation; by this in-take and out-go of liquids the blood may be effectively washed of its toxins. Nitroglycerine in $\frac{1}{100}$th grain doses is sometimes valuable to relieve blood tension and promote diaphoresis; but generally the blood tension is sufficiently reduced by the active function of skin and bowels. Veratrum viride is much approved by some authorities; but that drug and pilocarpine have both been discarded by the writer. To control convulsions and nervous restlessness, morphine is used. In the event of a living, viable fœtus, and in order not to inhibit uterine contractions, it is used in moderate doses, generally not more than $\frac{1}{4}$ grain, with subsequent $\frac{1}{8}$ grain doses at two-hour intervals, or $\frac{1}{4}$ grain doses according to indications and results. In some cases, when the purgation is not too active, chloral hydrate and sodium bromide by rectum are valuable adjuvants to morphia.

Meanwhile watch is kept for the invasion of labor, which quite generally supervenes. If labor is not excited by the eliminative treatment, and the toxæmia and convulsions abate, pregnancy is allowed to continue, especially when the fœtus is alive and not yet viable; if the fœtus is dead, the woman is generally allowed to await spontaneous delivery. In chronic nephritis, however, labor is quite generally induced not later than the end of the eighth month. When under eliminative treatment labor begins, as soon as the cervix is softened, effaced, and a little dilated, hydrostatic bags are used and the labor terminates unaided, or more generally is completed with forceps or version and extraction. In some cases, in which toxæmic symptoms are diminishing under treatment, and the labor is active, the bag needs not to be used, and the patient may be allowed to dilate and deliver herself unaided. After delivery, eliminative treatment is continued until convulsions cease and œdema disappears. Sometimes there is free post-partum bleeding, and in the presence of a persisting high blood-pressure this

is regarded as a beneficent phenomenon. Reference has already been made to what must be regarded as rational treatment of severe toxæmic convulsions when the usually successful eliminative and sedative measures fail.

It is generally recognized that neither ether nor chloroform is a good anæsthetic for use in the obstetric surgery of the toxæmic parturient in convulsions, on account of the pulmonary and renal irritation of the former, and of the hepatic irritation of the latter; some authorities on this account recommend nitrous oxide gas. With this anæsthetic agent in the conditions under consideration, the writer has had insufficient experience to judge of its merits; but for six years he has used anæsthol, consisting of ether 46 parts, chloroform 37 parts, and ethyl chloride 17 parts, and has been well satisfied with its effects. In this mixture the powerful ethyl chloride, dangerous in face of low blood-pressure, but safe with the high pressure present in such cases, makes it possible to secure and maintain the necessary anæsthesia with so small a quantity of the anæsthetic (seldom over one ounce) that the irritating effect of the small amounts of ether and chloroform is negligible. Anæsthol should be given only by an expert, and never to patients with a blood-pressure below 130.

The next following ten cases of pregnancy toxæmia with convulsions, which successively entered the writer's service at the Boston City Hospital during a period of three and a half months, were treated in accordance with the views and methods above expressed. They are not selected cases, but are all that entered during that service.

CASE XLIX

A primigravida of twenty, six and a half months advanced, entered hospital early on September 12th. She had had headache all night and two convulsions before the ambulance arrived. On admission she was conscious, but excitable and irrational; face and legs œdematous; no fever or vomiting; always constipated; pulse 112; blood-pressure 150; fœtal heart 144. Urine: 1030, acid; albumin, largest possible trace; sediment, free blood and pus, granular and hyaline casts with blood attached. No signs of labor. Eliminative treatment immediately begun, and during the day patient received a compound enema, 60 oz. cream of tartar water, 9 drams of Rochelle salts, and ½ grain of morphia in ⅛th grain doses; she was perspiring freely at 2 P.M., had had four dejections, had passed a large amount of urine (not collected and measured), and had had four convulsions.

Sept. 13: In-take, 130 oz. cream of tartar water, 30 oz. milk, 27 drams Rochelle salts, 2 oz. Epsom salts, 15 grains jalap, 15 grains triple bromides, three ⅛th grain doses of morphia; out-go, 17½ oz. collected urine, 8 dejections, free sweating. Patient more rational and quiet, slept at intervals, no more convulsions.

Sept. 14: In-take, 86 oz. cream of tartar water, 40 oz. milk, 24 drams Rochelle salts, 15 grains triple bromides; out-go, 25½ oz. urine, 18 dejections, profuse sweating. Patient slept at intervals.

Sept. 15: In-take, 50 oz. water, 12 oz. cream of tartar water, 47 oz. milk; out-go, 24 oz. urine, 10 dejections, continued sweating.

Sept. 16: Patient rational since yesterday, sweats profusely, bowels kept open with one dram Rochelle salts every hour, urine 23 oz., dejections 10, kept quiet with ⅛th grain doses of morphia every four hours, alternating with triple bromides; albumin ¼ per cent.

Sept. 20: Pulse and temperature normal, blood-pressure 160; is taking fluids freely, milk diet, œdema gone; no morphia for two days, bromides omitted; total urine last four days 213 oz.; fœtal heart 140.

Sept. 25: General condition improving, kidneys and bowels working well, blood-pressure 150.

On October 2, three weeks after admission, patient was in excellent condition, and in spite of rather heroic sweating and purging labor had not supervened. As the fœtus was still alive, it was hoped that pregnancy might continue until the baby was safely viable; but four days later the fœtal heart was not heard, and on October 8 a macerated fœtus was spontaneously born; the placenta contained a large white infarct. On October 24, when the mother was discharged well, the urine had sp. gr. 1022, and contained a trace of albumin, but no renal elements.

Comment. — As happens occasionally, it was thought in this case that the pregnancy might continue and a living baby be born at term. The writer has seen not a few cases in which pregnancy thus continued, after the amelioration of the toxæmic condition. It is interesting to note that this woman, twenty months later, delivered herself at full term of an eight-pound living baby, having had no toxæmic symptoms during the pregnancy.

CASE L

A woman speaking no English entered hospital late on October 18. The only history obtainable was that the patient had been well up to 2 P.M., when she had a headache; at 4 P.M. she had a convulsion, and four more prior to admission, when she was unconscious. Apparently nearly at full term, but not in labor; baby living; maternal pulse and temperature 138 and 102.8 respectively. She was put on the usual eliminative treatment; and as the cervix was soft and would admit one finger, a Voorhees bag was inserted. The next forenoon the cervix was found fully dilated, and a living baby weighing seven pounds was delivered with low forceps. Patient recovered consciousness on the third day; she then drank well and her general condition was satisfactory. She was able to nurse the baby, which weighed seven and a half pounds on the 26th day, when mother and baby were discharged well, the mother's urine showing no albumin and no renal elements.

CASE LI

A secundigravida, unmarried, aged twenty-nine, entered hospital November 9. For a week she had noticed œdema of feet and legs, and had felt unable to work; in bed one day and had vomited all food; no pain or headache; pulse 86, temperature 98.6; had several mild convulsions before, and one shortly after, admission. Patient seven months pregnant, cervix closed; fœtal heart not heard, nor movements felt. Urine: 1028, acid, albumin ½ per cent, many granular casts with cells attached, few fatty casts, some free blood and pus. Eliminative treatment. Patient had no further convulsions after admission until the night of November 14, when she had six, and it seemed best to induce labor. The cervix was soft and dilatable, and a Voorhees bag was introduced under anæsthol in the early forenoon of November 15; a six to seven months macerated fœtus was normally born at 7.30 P.M., the placenta showing many white infarctions. For several days after delivery patient was irrational and

restless, requiring large doses of bromides; but she was completely recovered from her toxæmia and was discharged well on the 26th day.

CASE LII

A septigravida of thirty-six entered in the evening of November 10. She had noticed œdema of the legs for the past two days, and had had headache and disturbed vision since the morning; at 6 P.M., she had labor pains, at 6.45 P.M. her first convulsion, at 7.45 P.M. a second, and a third in ambulance. On admission the cervix was soft and admitted one finger, the fœtal heart was not heard, blood-pressure 200; she was put on eliminative treatment, and there were no further convulsions. Next morning the os admitted two fingers, the cervix was easily dilated under anæsthol, and a six to seven months macerated fœtus was delivered by internal podalic version. On the 16th day the woman was discharged well except for her chronic nephritis.

CASE LIII

A negress of twenty-two, married ten months, primigravida, entered hospital early on November 26, having had three convulsions. She was unconscious, restless, and breathing stertorously; a moderate œdema of face and ankles; apparently eight months pregnant, cervix soft, admitting one finger, not effaced; membranes not ruptured; head presenting, high; fœtal heart not heard. Urine: ½ per cent albumin. Blood pressure 145. Patient was placed on the usual eliminative treatment, to which she reacted well, but continued to have convulsions. At 9 A.M. she was definitely in labor, and by 11 A.M., the os was almost fully dilated; the membranes were then ruptured, dilatation completed, and an eight months living baby delivered with high forceps. The woman continued to have convulsions for forty-eight hours after delivery, however, having thirty-three in all; she then became conscious and rational, and made an uninterrupted convalescence. Despite drastic saline purgation, she had an abundant supply of breast-milk after the third day,

and was able to continue entire lactation for the baby, which steadily gained weight. Mother and baby were discharged well on the 18th day.

CASE LIV

A primipuerpera of eighteen, married ten months, entered hospital December 4, having been delivered at home at 3 P.M. that day of living twins at eight months, and having had twelve post-partum convulsions before entrance. At entrance she was semi-conscious, but irrational, flowing moderately, uterus hard. Temperature 102.2, blood-pressure 148; the urine showed a very slight trace of albumin. Patient was placed on the usual eliminative treatment, to which she responded well, but had eight more convulsions during the next forty-eight hours. She then gradually recovered consciousness, temperature fell to normal, and patient made an uninterrupted convalescence. There was slight lactation, but insufficient for nursing. The babies were fed on modified cow's milk, and were discharged with the mother on the twenty-third day, the latter well, the former weighing three and a half and five and a half pounds respectively.

CASE LV

A primigravida of twenty, married one year, entered hospital at 11.30 P.M., December 29. For past three weeks has had some swelling of hands and feet. At 7 P.M. the same evening went to bed with severe headache, had a convulsion and became unconscious; two more convulsions before admission. At entrance patient was semi-conscious, but irrational; apparently eight months pregnant; cervix soft, admitting two fingers; membranes intact; head presentation; fœtal heart 152; urine, ½ per cent albumin; blood-pressure 140. Patient was put on eliminative treatment; but as convulsions continued, the largest size of Voorhees bag was introduced at 2 A.M., December 30. Patient took in active labor, expelled the bag at 8.30 A.M., and delivered herself in an hour of a stillborn fœtus; placenta much infarcted.

Patient returned to bed and eliminative treatment continued; she had altogether three convulsions before entrance, twelve between entrance and delivery, and seven after delivery, the last at 4.10 P.M., December 30. She then regained consciousness and made a rapid and uneventful convalescence.

CASE LVI

A primigravida of thirty-three, married eight years, entered hospital January first. She had had headache and epigastric pain for several days before admission; first convulsion at 1 A.M., January 1. At entrance patient was conscious, but not rational, very restless with much jactitation; apparently seven and a half months pregnant; cervix soft, admitting two fingers; membranes not ruptured; head presentation; fœtal heart 140; urine, ¼ per cent albumin; blood-pressure 148. The usual eliminative treatment was instituted, and the largest size of Voorhees bag was introduced. Patient's condition remained about the same throughout the day, but without further convulsions. At 8 P.M. the bag was extruded from the cervix, which was soft and completely dilatable; head not engaged, fœtal heart 160. Under anæsthol the high forceps was applied, and the baby extracted, apparently dead, but after forty minutes of mouth to mouth insufflation the baby was resuscitated and lived, although small and choked with mucus. The mother made an uninterrupted convalescence, regaining rationality on the second day after delivery; and both mother and baby were discharged well.

CASE LVII

A primigravida of twenty-three entered hospital in the afternoon of January 2, having had ten convulsions at home and one during transportation. Patient apparently seven and a half months pregnant, comatose; pulse 130, thready; cervix soft, admitting three fingers; membranes intact; head presentation; fœtal heart not heard. Urine shows large trace of albumin; blood-pressure 190 to 205. Placed on routine eliminative treatment, and the largest sized

Voorhees bag inserted. Six further convulsions, patient being semi-conscious and very violent in the intervals. At 2 A.M., January 3, the bag was found to have been extruded, and patient was delivered of a dead fœtus by high forceps. After delivery the blood-pressure fell to 80, but subsequently rose to 90 and remained at that level throughout convalescence, which was satisfactory. The patient had no further convulsions; but on the third day, after regaining consciousness, she was for a time maniacal, but recovered in twenty-four hours from her psychosis, and was discharged well.

CASE LVIII

A primigravida of nineteen, married one year, entered hospital at 8 P.M., January 20, having had four convulsions. She had had headache for several previous days, but no eye symptoms. Patient was found to be semi-conscious, very restless, and breathing stertorously. She was apparently at term; the cervix was hard and not effaced, admitting one finger; membranes intact; head presenting; fœtal heart not heard. Urine showed hyaline casts and ½ per cent albumin; blood-pressure 180. Patient was immediately put on eliminative treatment; she drank water freely and perspired well, but the bowels did not move in spite of continued administration of salts. Within the next hour the patient had two more convulsions. The largest Voorhees bag was then inserted, at 9.30 P.M., and labor pains soon began. At 1.30 A.M., January 21, the bag was still *in situ*, the cervix thinned, but still rigid, the os admitting only two fingers. Patient had had two more convulsions, but further delay was decided upon. By 5.30 A.M. the patient had had three more convulsions, a total of eleven. By this time the bag had been extruded, the os easily admitted four fingers, the cervix was soft and its dilatation was readily completed. The fœtal head, previously high and floating, had become well engaged; under anæsthol, therefore, the delivery of the dead fœtus was quickly completed by an easy intermediate forceps operation. The placenta showed extensive areas of white degeneration. The patient was allowed to bleed moderately from the uterus, and no ergot was given. The blood-pressure fell after delivery to 150, and the next day to 140. Patient recovered consciousness within a few hours. Eliminative treatment was continued; but the bowels did not move for twenty-four hours after entrance, and then not until after the patient had received two high compound enemata, and by mouth two drops of Croton oil and a total of 22 ounces of Epsom salts. After the bowels had moved the patient drank water almost continuously for thirty-six hours. She had no more convulsions after de-

livery, and her convalescence was uncomplicated save for an attack of tonsillitis.

Comment. — In these ten preceding successive cases, then, one of which was a case of twin pregnancy, five babies were discharged well, and six were stillborn (including three macerated fœtuses); all the mothers recovered.

Case LIX

A clergyman's wife, aged forty, who had had two normal pregnancies and labors, was referred by her physician to the writer's service at the Boston Lying-in Hospital because of a toxæmia in her third pregnancy: there was an indefinite history of one convulsion before she left her home.

Diagnosis. — On admission the patient gave unmistakable evidence of profound toxæmia. She was semi-comatose, with complete loss of vision. There was a moderate œdema of body, vulva, face, hands, and lower extremities. There was almost constant vomiting. The blood-pressure was 155. The urine contained a large trace of albumin, with large numbers of hyaline and fine granular casts.

Subsequent History, Treatment and Result. — The eliminative and sedative treatment already outlined was ordered, and was immediately begun. Two hours after admission the lady had a typical convulsive seizure, with opisthotonos, arrested respiration, and cyanosis: the pupils were widely dilated and did not react to light. There were clonic spasms of the muscles of the face and limbs. The convulsion lasted from two to two and a half minutes. The patient responded well to vigorous treatment, and had no more convulsions. The next day she took in labor, induced no doubt by the drastic eliminative measures, and delivered herself normally, and apparently almost painlessly, in three hours: the baby weighed six pounds and fourteen ounces. The headache and vomiting ceased the following day, and two days later vision began to re-appear. The blood-pressure fell to, and remained at, 120 to 130. The urine cleared, until it contained a slightest possible trace of albumin and a few hyaline casts. The patient suckled her baby. She was discharged well on the fourteenth day, with apparently complete restoration of vision, and with her baby doing well.

Comment. — This was, of course, a gratifying result, to him who directed the treatment and to those who carried it out. Surely the result could not have been better with *accouchement forcé*. But it is needless to say that not all cases respond satisfactorily to eliminative and sedative

treatment, and occasionally it seems imperative, in cases which do not respond in a reasonable time, to empty the uterus by forcible dilatation or by vaginal hysterotomy: here is where the trained judgment must decide; but it seems to the writer that such desperate cases are relatively few in number, and are to be found among those so deeply toxæmic that no treatment may prove successful. The following is a case in which convulsions continued, in spite of eliminative and sedative measures, and the *accouchement forcé* was resorted to:

A lady of thirty-seven married and shortly became pregnant. She was carefully supervised, and did very well until about six and a half months advanced, when there was a glycosuria, which, however, soon disappeared under regulated diet: at the time she was excreting 19.49 grams of urea. In two weeks there was some morning nausea and some œdema of the legs, but no other symptoms: the total urea was still over 19 grams; but there was ½ per cent albumin, and the sediment showed hyaline, fine granular and a few coarse granular casts, some with an occasional renal cell adherent: the total daily amount had fallen to 24 ounces. The patient was directly put to bed, given a diet of only milk, toast, and butter, and placed on mild eliminative treatment. Six days later the skin and bowels were acting well, but there was some headache for the first time: the albumin had dropped to $\frac{8}{10}$ per cent; but the total urea had also fallen to 12.3 grams, and the sediment showed numerous hyaline and fine granular and some coarse granular casts, many with renal cells adherent, an occasional epithelial cast, and a few red blood corpuscles: meanwhile the 24-hour amount of urine had fallen to 20 ounces. Three days later the œdema was much less and there seemed to be general improvement; but in two days, when between seven and seven and a half months, she was seized with a convulsion. Under eliminative and sedative treatment there was, at first, improvement; but recurring convulsions made it seem advisable to empty the uterus without delay: this was accomplished by instrumental and manual dilatation, version, and extraction; the baby, not more than seven and a

half months developed, survived only a few minutes. The convalescence was a stormy one, and was a struggle with pulmonary œdema, bronchitis, and cardiac weakness; but in four weeks the patient had so far recovered as to sit up and could take a milk and carbohydrate diet. Six weeks after delivery the total urine was 64 ounces; albumin, very slight trace; total urea, 13.8 grams; sediment, occasional hyaline, fine granular, and epithelial casts, no blood or crystals. A month later albumin and casts had disappeared, proteid diet was gradually resumed, and the recovery was complete.

Subsequent History. — In spite of advice a second pregnancy supervened only four and a half months after recovery from the severe toxæmia, and again the case was supervised with the greatest care, this time with greater success. The patient was more submissive to dietary discipline. A sufficient amount of water was taken, the diet was kept almost proteid free, and occasionally Basham's mixture was used. At seven months there was the slightest possible trace of albumin, and a rare hyaline and fine granular cast; but the total daily amount was 73 ounces. The total urea was 10.95 grams; but the diet would account for this. However, as there was a little morning nausea the patient was put to bed with a milk diet, Basham's mixture, and a calomel purge. Two weeks later there was no œdema, no headache; but the albumin was a slight trace, the total urea 9.07 grams, and occasional casts. At this time, seven and a half months, the uterus reached its limit of distention with twins, and greatly to the writer's peace of mind the patient spontaneously delivered herself, the combined weight of the twins being eight pounds. At the end of six weeks the voided specimen contained the slightest possible trace of albumin, but no blood, casts, or crystals, and there were no nephritic symptoms. The twins had now reached full term, and had gained eight and a half and six and a half ounces respectively. Mother and babies were discharged well.

It may be of interest to note that the twins were of the same sex: the placenta was single, with one chorion and two amnions, and the amniotic septum had remained intact.

Comment. — The above case is the only one in the writer's private practice of thirty-eight years in which pregnancy toxæmia has progressed to the stage of convulsions, although not a few toxæmics have caused anxiety, and have received assiduous observation and prophylactic treatment. The case is given largely to call attention to the great importance of the conscientious care of pregnancy, with a view to the prevention, cure, or control of the toxæmias incident to that condition, to the end that actual eclampsia may not occur.

It is perhaps superfluous to repeat the generally accepted dictum that prevention of disease is the greatest function of medical science. But when it is remembered that eclampsia is probably the most serious, and in these days, under whatever treatment, the most fatal, complication of pregnancy and parturition, it behooves the student and practitioner to realize that the symptom-complex known as puerperal eclampsia is to a large degree a preventable disease.

Intelligent and successful prophylaxis of eclampsia presupposes an opportunity for the observation of pregnancy from the early months. It presupposes that the observer will exercise an intelligent supervision over the daily life and general health of the gravida; that he will not content himself with an occasional test for albuminuria, but will assure himself that the skin, bowels, and liver are performing their functions; that the lungs, unhampered by undue compression by tight clothing, are supplied with pure air, and that the nutrition is adjusted to the increased demands of fœtal development, with a view to preventing undue impairment of the maternal well being. He will make systematic observation of the patient's blood-pressure, a valuable index of the circulatory system. He will satisfy himself that the kidney is eliminating a proper percentage of urea, and, when necessary, will so regulate the use of highly nitrogenous food that this important organ will not be taxed unduly. He will bestow especial attention upon the condition of the gravida's nervous system, enjoining freedom from needless excitement, worriment, and mental perturbation, quieting groundless fears, and ensuring undisturbed and adequate sleep and mental repose. It is unfortunately true that ade-

quate supervision of pregnancy is not always possible; but it is also true that except in the lowest social strata it generally would be possible, were its importance fully appreciated. And for the poor, pregnancy clinics are now to be found in some cities in connection with lying-in charities. It is not to be supposed that proper supervision of the pregnant entails, as a rule, either a large expenditure of time on the part of the physician or burdensome pecuniary expense to the patient: under ordinary circumstances, an occasional visit enables the physician to teach his patient how to live under the new conditions in which she finds herself, and to correct by appropriate advice and treatment any departure from normal, physiological function.

CASE LX

A young married woman, referred by her family physician, came with her mother for the writer's opinion and advice. It appeared that some time in her girlhood she had had acute nephritis, from some untraceable cause: she recovered, and seemed to be in good general health and without symptoms; urinalyses had shown that a chronic nephritis persisted, and she had been advised never to marry. She did marry, nevertheless, and then was urgently advised that she should not allow herself to become pregnant. All the while, indeed for a long time, she had been on a carefully adjusted nephritic diet, and had thus continued very well. As might have been expected, she became pregnant, suffered the usual early symptoms, and consulted her excellent family physician. He took much pains with the case, and had several urinalyses made by an eminent internist. The internist wrote that "after the various examinations of the urine he had been forced to the conclusion that it would be unwise for her to have children". The family physician, in the light of this opinion, consulted several obstetricians, and they all advised therapeutic abortion. To this advice the young woman and her husband strenuously objected, with the result that it was agreed that the case should be laid before the writer for final decision.

In dealing with this highly responsible duty, the writer took time for consideration, and study of the case. The young woman was then about four and one-half months pregnant; except for a diminishing morning nausea, which she had had since early pregnancy, she was very well, and had no symptoms referable to her nephritis: the heart was clear and unaffected. The blood-pressure was 150, as it well might and should be with the reported renal condition. She had learned to live on a carefully restricted nephritic diet, and rigidly adhered to it. But before making a decision the urine was to be carefully studied: to this end the urine was collected in two portions, the 12-hour day urine and the 12-hour night.

Report on 12-hour day urine: — Amount 20 ounces; cloudy; acid; 1.012; indoxyl and chlorides, normal; uric acid, not increased; albumin, slight trace; bile pigments, absent; sugar, absent; urea, 7.2 grams: sediment, — considerable, cloudy; squamous and renal epithelial cells; hyaline and fine granular casts; a few blood and fat globules; some triple phosphate crystals; no fatty casts, and no adherent blood or renal cells found.

Report on 12-hour night urine: — amount 16 ounces; pale; acid; 1.010; indoxyl and chlorides, normal; uric acid, not increased; albumin, slight trace; bile pigments, absent; sugar, absent; urea, 5.13 grams: sediment, — slight; night amount not unduly increased; its sediment is the same as the day's, but less in amount; amount of albumin the same in day and night: total urea in the 24 hours, 12.33 grams: diagnosis, quiescent subacute glomerulo-nephritis.

This was the renal condition, which, under the strain of pregnancy, might become worse; but the young woman wanted her baby and was willing, while promising rigid adherence to advised regimen, to take some chances. If, under close observation, the renal condition became worse and threatening, the uterus could be emptied later. If this pregnancy were to be aborted then, would she not live in constant apprehension of another pregnancy? In spite of intended precaution, would she not be pretty sure to become pregnant again? If she did again, and again, would it be right to continue a series of abortions, and would a complaisant physician be found to perform them? On the other hand, if she could be carried through this pregnancy, the baby saved, and the parental instinct satisfied, would not this young couple be more likely to take no chances of another pregnancy without the knowledge and permissive advice of a responsible physician? It seemed so, and on the principle of " nothing venture, nothing have " the opinion was given that the pregnancy should be allowed to proceed, under close observation. The patient, on her part, took time to consider; and two weeks later, by the advice of her family physician, she placed herself under the writer's care: this was June 15.

Subsequent History. — Reports of urinalyses:

June 21: 24-hour amount, 54 ounces; albumin, a very slight trace; total urea, 12 grams; squamous and small round epithelial cells, some leucocytes, no red cells, hyaline and granular casts, few fat globules.

July 7: 24-hour amount, 24 ounces; dark; 1.014; albumin, $\frac{1}{10}$ per cent; total urea, 14.4 grams; many squamous and small round epithelial cells, secondary deposit of amorphous phosphates, some hyaline and fine granular casts with blood and fat cells adherent, a few triple phosphate crystals. This report was discouraging: there was a marked diminution in 24-hour amount and more albumin; but there had been a period of extreme heat, and consequent freer perspiration.

July 26: 24-hour amount, 40 ounces; alkaline; 1.013; albumin, slight trace; total urea, 9.6 grams; deposit of amorphous phosphates, squamous, large and small round epithelial cells, some hyaline and fine granular casts, no blood or fat: a slight improvement, although the total urea had diminished; but the diet was practically proteid free.

August 12: 24-hour amount, 40 ounces; 1.010; albumin, slight trace; total urea, 6 grams; profuse deposit of acid ammonium phosphate and ammonio-magnesium phosphate crystals, squamous epithelial and small round renal cells, a few hyaline and fine granular casts; no blood. The phosphaturia was obviously due to diet, and the diminished total urea probably so.

September 7: 24-hour amount, 40 ounces; pale, alkaline, 1.006; no increase of uric acid; albumin, a slight trace; total urea, 6 grams; a slight deposit of amorphous phosphates, some squamous and small round epithelial cells, a few red blood cells, some hyaline and fine granular casts. The total urea continued very low, and the blood cells were regrettable; but the patient felt well and happy, was nearly eight calendar months along, and had no subjective symptoms.

October 2: 24-hour amount, 33⅓ ounces; pale, alkaline, 1.008; albumin, a slight trace; total urea, 6 grams; profuse deposit of amorphous phosphates, squamous, large and small round renal cells, a few hyaline and fine granular casts and leucocytes.

Record of the Labor and Convalescence. — On October 12, having reached full term in subjectively excellent condition, this young woman began to have slight uterine contractions. Her pains continued poor, and at infrequent intervals, for the next twenty-four hours, the cervix being soft and patulous, but making no progress in dilatation. The urine at this time showed ½ per cent of albumin, and many casts and renal cells: the patient had a bad headache, and the blood-pressure, which had thus far kept quite steadily at 150, now rose to 160. The largest size of the Voorhees inflatable hydrostatic rubber bag was introduced, without anæsthesia: within an hour pains became excellent in quality, and recurred every five minutes. Six hours later the bag was expelled: the os was then nearly fully dilated, the membranes still unbroken; the pains continued good. An hour later the membranes ruptured, the head descended in O. L. A. position, gradually moulding into the pelvis. Another hour later the patient began to complain of fatigue, and as progress had apparently ceased she was given anæsthol and the baby delivered with forceps: the baby weighed eight and a half pounds. The mother had a normal, afebrile convalescence, during which she was continued on a nephritic diet, and given Basham's mixture, ounce $\overline{ss}$, t.i.d. Her blood-pressure never fell below 150; but the urine rapidly cleared, and rose in quantity. Two weeks after the delivery the urine report was: 24-hour amount, 48 ounces; pale; 1.011; uric acid not increased; albumin, a trace; total urea, 5.76 grams; many squamous, large and small round epithelial cells, abundant deposit of amorphous phosphates, some hyaline and fine granular casts, a few free fat and red blood globules.

The patient was kept under supervision for two months and a half: at the end of that time the urine contained only the slightest possible trace of albumin, and a few hyaline casts.

Subsequent History. — The happy mother suckled the baby for a year. Last seen when the baby was seventeen months old, the mother was in excellent health, had gained in weight, and the renal condition was unchanged.

Comment. — On discharge the young woman was advised that there should not be another pregnancy for several years,

and not then without full knowledge of the renal condition, and expert advice. Meanwhile she had her first baby, with her general health and renal function in no way the worse. The writer has no further comment. It might be added, however, that oftentimes, in chronic nephritis, mother and baby can safely be carried along until after viability, when induction of premature labor may be advisable, not only on account of the mother, but because fœtal life may be endangered by placental changes incidental to the chronic renal process. In the case above given premature labor would have been induced at any time after the thirty-second week, had the conditions shown danger to mother or child.

The writer is constrained to refer to one more case, as an encouragement to nephritic mothers desirous of offspring.

CASE LXI

A married lady of thirty had had eclampsia following the delivery of her living first child: this was in another State, and nothing was known of her renal condition at that time. When she was three months advanced in her second pregnancy the writer was asked to act as consultant in the case. At that time the lady was apparently in excellent health: the 24-hour amount of urine was 80 ounces; 1.009; uric acid not increased; total urea 18.24 grams; sediment, some squamous and large, round epithelial and neck-of-bladder cells, a few compound granule cells, and rarely a red blood globule and a leucocyte, no renal elements. She was given close observation, and advice as to diet and regimen. When pregnancy had reached seven months the 24-hour amount of urine was 45 ounces; 1.014; uric acid not increased; albumin, slightest possible trace, appeared for the first time; sediment, a few hyaline and fine granular casts, and some leucocytes. Under a most carefully planned and restricted non-proteid diet, the lady went on to term, closely watched, and delivered herself, in a labor of five hours, of a baby weighing seven pounds and six ounces. The convalescence was without incident: the pregnancy had been an anxious one; but the result was a happy one. The advice was given that some time should elapse before another pregnancy. Unfortunately, however, the lady became pregnant again in eight months. As early as two and a half months albumin appeared in slightest possible trace; but the 24-hour amount was 45 ounces; the total urea 18.76 grams, and no pus, blood, or casts were found in the sediment. A month later a few hyaline and fine granular casts appeared; there was some headache, but this symptom was not thought attributable to the kidney. At five and a half months the albumin had increased to a slight trace; under the non-nitrogenous diet the total urea had diminished to 9.59 grams; there were more casts, and an occasional red blood-cell. At six months there was a general improvement, owing apparently to stricter regimen, ample fluid in-take, and free catharsis: the 24-hour amount was 66 ounces; the albumin fell to a

slightest possible trace; the total urea excretion rose to 11.28 grams; the casts were fewer; there were no pus, blood, or crystals. It was found that at least once a week a free calomel purge was of advantage.

In three weeks the total urea had fallen to 6.6 grams, far below what is commonly regarded as the danger line; but the writer felt no alarm at this low excretion, in the absence of subjective symptoms, from the observation of other similar cases, notably the preceding case: the diet was chiefly of milk, cereals, and of vegetables of low nitrogen content. At seven and a half months there was a succession of headaches, tingling of fingers and toes, and disturbances of vision, and anxiety on the part of family physician and consultant. Still, at eight months the albumin remained at slightest possible trace, and the total urea had risen to 8.4 grams. The diet was only milk, cereals, and non-nitrogenous vegetables. And so the patient went on to term: she delivered herself of a seven and a half pound boy in a labor of five and a half hours. She made an excellent convalescence; but it was thought best that she should not nurse the baby. Four weeks after delivery the urine still contained the slightest possible trace of albumin; the total urea was 15.8 grams; no blood or casts were found.

Subsequent History. — Under a carefully restricted diet and a well-regulated life this lady has filled her place in her home, and is in the full enjoyment of life. Six years after her last baby, a troublesome retroflexion was treated with ventral suspension, and the appendix was removed; thereafter the report was " I never felt so well in my life ". Since then she has kept well, with an occasional upset from overfatigue or dietary excess. The voided urine usually contains the slightest possible trace of albumin and a few hyaline casts; and the patient has learned to live on a carefully restricted, almost proteid free, diet. She has three healthy children, worth to her all the self-denial she has been called upon to exercise, and the renal condition is not one which should jeopardize health under careful living.

CASE LXII

The wife of a hospital orderly, thirty-seven years of age and married when she was twenty-three, had had four normal labors followed by a miscarriage. A subsequent amenorrhœa and morning nausea led her to believe she was again pregnant, and when she was three months advanced she began to have pelvic pain and distress, and difficulty with micturition: at times she had been unable to pass water and had had to be catheterized; at times the urine would incontinently dribble away. Eight days prior to her admission to hospital the abdomen began to enlarge very rapidly, and she entered as a case of ovarian cyst.

Diagnosis. — When placed on the table for examination it was requested that the woman be catheterized; and the statement was made that a nurse had already used a catheter, and had drawn off seven ounces. Inspection showed a symmetrical ovoid tumor, the size of the eight months' pregnant uterus, *central in the abdomen.* The tumor was tense and elastic to the touch, and gave a distinct, fluid wave; it was flat on percussion, with tympany in the flanks. It was observed that the patient's clothing smelt of decomposed urine, and that urine dribbled from the urethra without control at every movement of the patient and on palpation of the tumor. The house surgeon was then requested himself to pass a catheter: the result was the withdrawal of 110 ounces of foul, alkaline urine, and disappearance of the abdominal enlargement. Bimanual examination then revealed a retroverted, four months' pregnant uterus, filling, and incarcerated in, the pelvis, pressing on, and thus occluding, the urethra.

Treatment and Result. — The retroverted uterus was replaced with bimanual taxis, by swinging it latero-transversely so as to bring up the fundus through the larger area of the left sacro-iliac arch. Once released from incarceration it was thought the uterus would retain its normal position without a pessary; but to make sure a pessary was used for a few days, and then discarded. It was four weeks before the bladder recovered its tone and the patient was able to con-

trol it; during this time catheterization, at lengthening intervals, was necessary. On discharge the pregnancy was progressing normally.

Comment. — It should be an invariable rule, before passing judgment on any abdominal tumor, first to consider two things, — distended bladder and the pregnant uterus: were this rule always followed surgeons would occasionally avoid the chagrin, and woman the detriment, of unnecessary surgery. Not a few cases come to mind in which erroneous diagnoses of ovarian cysts have been made, in which the tumor disappeared with the use of a catheter; and it is sad to say that the abdomen has from time to time been opened on a normal full-term pregnant uterus from a mistaken diagnosis of pathological cyst. Strange as it may seem the female bladder is the most often forgotten organ, — before, during, and after labor, as well as in the examination of the non-pregnant abdomen. While the above detailed case was under observation the writer was asked to see in consultation a woman eight days post partum. The attending physician stated that after normal delivery the uterus had shut down well, but that in a day or two it had enlarged again and seemed as large as a seven months' pregnancy: as there was some elevation of temperature and scanty lochia, he feared uterine infection; besides, the woman was suffering much pelvic distress. Upon inquiry it was learned that the patient passed urine frequently and in small quantities. This case might well have been one of ovarian cyst, with rapid enlargement from twisted pedicle. But from inspection and palpation a probable diagnosis of distended bladder was made; and following the rule a catheter was used and withdrew 60 ounces of urine: the bladder had simply been running over, like a filled hogshead under a rain-conductor. The uterus was found pushed backwards and downwards; but involution had gone on satisfactorily. The temperature in this case was easily explained by the reflex irritation of vesical distention; some women always have moderate fever when the bladder is full.

Unless memory is at fault, it was Sir James Y. Simpson who said that when a woman consulted him for retention,

the first thing he thought of was a retroverted, incarcerated pregnant uterus. Certain it is that such a uterus will ultimately shut off the bladder, the same as any neoplasm which fills the pelvis. Of course oftentimes symptoms lead to the discovery of the retroplaced pregnant uterus before it has grown large enough to occlude the urethra, and before it is incarcerated. A young married lady was referred to the writer on account of backache and pelvic discomfort; she had had amenorrhœa for three months, but didn't think she was pregnant. It appeared that owing to a hereditary stigma the lady felt that she ought not to have children, and had not intended to marry; but a physician had discovered that she had a retroverted and retroflexed uterus, and had assured her that she could not become pregnant: so on this assurance she married. (Who can say that any woman with a uterus, even with no palpable or even visible ovaries, *cannot* become pregnant?) A double task was here presented, first to calm an agitated and distressed mind, and second to replace and retain the retroflexed uterus. The latter was accomplished by recto-abdominal taxis, and the replaced uterus was held with a pessary until after the fourth month when it could not again retrovert. It all ended well: the young woman has since borne two children, and there has been as yet no evidence of hereditary taint.

If the retroverted pregnant uterus is bound down with adhesions, it may not be possible to accomplish reposition unless the abdomen is opened, and unless replaced the uterus is likely to empty itself by abortion or miscarriage. That nature sometimes pursues a kinder course is shown by the following experience: thirty years ago the writer was treating a young wife for an adherent retroversion, hoping gradually to raise the uterus by vaginal packing; the patient was advised not to become pregnant until reposition should have been accomplished and was told that she would be liable to miscarry if she did. As might naturally be expected she became pregnant nevertheless, and all further local treatment was suspended: gradually the uterus rose out of the pelvis, and the young woman went to full term. Notwithstanding the writer's cautious, but unheeded, advice and his unfavorable prognosis, he was called in to conduct the normal labor.

CASE LXIII

An attractive young Irish housewife, nine months married and seven months advanced in her first pregnancy, was taken rather suddenly one evening with pain in the right side of the abdomen. She vomited once, and the bowels, which were habitually constipated, moved after an enema. This relieved her so that she was able to sleep that night; but next morning the pain returned and was more severe in character. She ate her usual breakfast, though without appetite, but vomited shortly afterward. She went to bed feeling feverish and summoned her physician, who, after examination, told her she should go to a hospital for an operation.

Diagnosis. — At entrance to the hospital, nearly twenty-four hours after onset of attack, she appeared flushed, but otherwise did not look sick. Her tongue was dry and coated. The abdomen presented a normally pregnant uterus, with the fundus rising a hand's breadth above the umbilicus. The right rectus muscle was resistant to pressure, and there was definite tenderness at the level of McBurney's point, extending into the right flank. There was no tenderness in the costo-vertebral angles, or over the left side of the abdomen. Vaginal examination was negative. The temperature was 100.8°, the pulse 100, the white count 12,000. The urine was concentrated, but otherwise normal.

The diagnosis seemed to lie between inflammatory process in the appendix or in the right tube. As there was no history of previous similar attack and no stigmata about the vulva of gonorrhœal infection, the greater likelihood of appendicitis seemed presumptive. As the attack, however, was still early, and the symptoms not fulminating, it seemed fair to see whether palliative treatment would not cause their subsidence.

Treatment and Result. — The patient was therefore put to bed, given water freely, but nothing else, by mouth, the bowels moved by enema, and an ice-bag applied to the right flank. She passed a fairly comfortable night; but in the morning the pain had rather increased than decreased in

severity, the tenderness was more acute over McBurney's point, the temperature had risen to 101.4° and the white count to 17,000. Under these circumstances, immediate operation seemed indicated.

The abdomen was opened by an incision along the outer border of the right rectus muscle, which was retracted inward. The appendix, easily found, was acutely red, swollen, and injected, but there was no fluid or fibrin about it. The appendix was removed, its stump buried, and the abdomen closed in layers, without even touching the pregnant uterus.

The patient made an uneventful convalescence. A few random uterine contractions during the first three days were controlled with morphia. After removal of the stitches on the eighth day, the wound was securely strapped with adhesive plaster to relieve tension. The patient got up on the fourteenth and left hospital on the sixteenth day, still with the wound firmly strapped. She went to term and was normally delivered of an eight-pound living child. During the early days of puerperium there was some pain in the right lower quadrant: this was attributed to traction on possible adhesions by the involuting uterus. There was no stretching of the abdominal scar, and on the completion of the puerperium she again left hospital with a solid wound, without trace of hernia.

Comment. — Appendicitis is a not infrequent complication of pregnancy. It should be treated exactly as if the pregnancy did not exist. When operation becomes necessary, miscarriage is not inevitably, or even usually, the result. When the wound can be carefully closed in layers without drainage, the scar will usually stand the strain of subsequent abdominal distention, and of labor, without stretching. When drainage is necessary, miscarriage and hernia are more likely to ensue. In another case of the writer's observation, however, which was first seen on the third day, after the appendix had perforated and there was a collection of pus about it, the wound granulated solidly after drainage, the patient went to term, and was delivered by forceps without injury to the scar.

CASE LXIV

A young wife, whose first baby the writer had delivered with forceps three years before, comes from her home in another State to visit relatives and to rest from family cares and duties. Soon after her arrival she begins to flow slightly and to have a heavy feeling in her back, so she goes to bed; but the slight flow continues, and as she has had amenorrhœa for two months she fears it may portend miscarriage: she therefore sends for advice.

Diagnosis. — Of course with two months of amenorrhœa there is a strong presumption of pregnancy, in a healthy, married woman, although there may be no other symptoms. But the cervix is found somewhat softened, the uterus slightly larger than when the lady was discharged after her last full-term labor and puerperium, and even without the blood test of Abderhalden there seemed no reasonable doubt of early pregnancy. The lady is advised to remain in bed in the hope of averting a possible abortion: in the absence of pain no medicine is given; but the bowels are moved by enemata.

Subsequent History and Treatment. — In spite of entire rest in bed in the care of a nurse, the slight blood leakage continued, and a week later a sharp accession of pain with increased flowing resulted in a partial abortion. When visited, the os was patulous to one finger, some of the fœtal envelope was shown, but more was seen hanging through the os uteri: all bleeding had stopped; but it seemed best to remove the incompletely aborted ovum by a gentle curettage.

Result. — The young woman was kept in bed for ten days, and made an afebrile convalescence. She was allowed to get up gradually, and to go home three weeks after her disappointing abortion.

Comment. — In abortions of less than three months, the ovum is very generally cast off entire, the os closes, bleeding ceases, and very often no physician is called. When, however, in cases like the above, the abortion is incomplete, and when oftentimes bleeding continues, gentle curettage is usually advisable. The fact that bleeding continues is good

evidence that the uterus is not empty; and the evidence is enhanced if it is found that the os remains patulous. In such cases, unless the uterus is emptied, bleeding is likely to continue indefinitely, infection may occur, and the train is laid from the neglected abortion to a variety of pelvic disorders and even chronic invalidism.

When the pregnancy has advanced to four months and the period of complete placental formation, miscarriage, as it is then usually called, is very likely to result in the escape of the fœtus and the retention of the placenta, which is then unripe, and like a green blackberry leaves its seat unreadily. It is therefore generally necessary to assist nature by removing the fœtal envelope: this can generally and best be accomplished by finger curettage, if necessary twisting some gauze about the slippery, gloved finger; and sometimes it is best to assure the cleanliness of the uterus with instrumental curettage. Bleeding rarely continues after the uterus is empty.

CASE LXV

A young married lady had miscarried early in her first pregnancy; and as she earnestly desired children, she was glad to find herself again pregnant, as she presumed, from skipping a period, from morning nausea, and from tingling sensations in her breasts. But when she was presumably about five weeks along, she had a slight staining, and feared it might presage another miscarriage, although there was no pain; she accordingly went to bed, and kept very quiet for several days.

Diagnosis. — Eight days later there was another, rather more profuse, staining, and again she kept quiet, and was seen by the writer. The next day there was some slight, spasmodic pain in the left lower quadrant, and the lady was again seen by the writer, who had been informed previously in regard to the presumed pregnancy. The history excited his suspicion of tubal pregnancy, and he saw the patient the following day. There had then been another attack of pain, and the slight staining had continued. Bimanual examination showed a small, tender swelling in the continuity of the left tube, *which it was known was not there before*, for the patient had been carefully examined before this supposed pregnancy had begun. A consultation was asked for, and was held the following day: the consultant listened to the carefully stated history, and the above stated physical findings, and agreed in a diagnosis of left tubal pregnancy.

Operation and Result. — The day after the consultation the abdomen was opened, and the left tube was seen to have a swelling in the isthmus corresponding in size to a fecundated ovum of between six and seven weeks: the tube was removed, and the healthy ovary left *in situ*. Inspection of the right tube and ovary (and appendix) showed nothing abnormal. The abdomen was closed without drainage, and the patient made a normal convalescence.

Pathological Report. — " An unruptured tube containing an ovum considered to correspond to six to seven weeks of pregnancy."

Subsequent History. — Two years and four months later this lady again became pregnant. The pelvis was of *justo-minor* type to a slight degree; but the fœtal head settled through the brim, and was found in the pelvis seven weeks before full term. In the eighth month there was a slight toxæmia, which disappeared under treatment. The head presented occiput right posterior before labor began; but the occiput rotated to the arch, and a six-pound-and-nine-ounce baby was normally born: the laparotomy scar stood well during pregnancy and labor.

A year and ten months later this lady again became pregnant: the head again presented, O. D. P.; but this time did not descend into the pelvis before labor. Postural treatment in this case did not effect anterior rotation; but when the membranes were ruptured at the end of the first stage, the head descended, the occiput rotated to the arch, and spontaneous normal delivery took place: the baby weighed eight pounds and seven ounces.

Eighteen months later another pregnancy began, and this time the lady did not feel that she could leave her home in another State and come to Boston for delivery: it was learned, however, that a nine-pound baby was duly born after "a very hard labor, with ether and instruments", in the care of the family physician.

This lady, then, bore three full-term living children after the successful removal of an unruptured pregnant tube. It has been shown that ectopic pregnancy sometimes occurs in the other tube, after the removal of a ruptured or unruptured pregnant tube: for this reason it has been suggested that it would be advisable to remove both tubes at the first operation to forestall such a possibility; but would an ophthalmologist, after enucleating one eye for cause, then proceed to enucleate the healthy eye, lest it later might lose its function?

It is worthy of notice in this case that following the usual rule the successive babies were progressively larger, — six pounds nine ounces, eight pounds seven ounces, and nine pounds, respectively; and easy to understand that while the first two were born normally through the slightly contracted

justo-minor pelvis, the forceps was required for the last. Hence it is that Cæsarean section is sometimes clearly indicated in the later labors of multiparous women who have had earlier normal deliveries. It is not the size of the pelvis alone, nor indeed the size of the baby alone, but the relation to each other of passage and passenger which must in each case be considered.

Comment. — The diagnosis of tubal pregnancy in the above case was easy, for two reasons: first, there was a clear and reliable history; second, the previous condition of the pelvis was known, and the tender swelling in the left tube was recognized as of recent origin; it was furthermore known that there had been no recent infection, and there was no elevation of pulse or temperature. A highly probable diagnosis can often be made on history alone, surely to be confirmed by pelvic examination when the patient has been carefully examined beforehand and the local conditions thus known. Of course, in the hospital class histories are generally very little to be depended upon. The amount of staining and bleeding varies much in different cases: in some cases, like the above given, there is only a slight staining; in others, there may be considerable discharges of blood, which are more suggestive of uterine abortion or pelvic inflammation: when there is much open bleeding from the pregnant tube, there is also generally a considerable bleeding into the peritoneal cavity. In some cases there is a uterine membranous discharge, shown by the microscope to be decidua, — a very useful piece of evidence in doubtful cases. A private case is recalled, of a lady whom the writer had delivered of two children, and who had no pelvic infection; symptoms and history were strongly suggestive of ectopic pregnancy, although no swelling could be felt in either tube: while under close observation, the lady discharged a decidual cast, and the pregnant tube was promptly removed before rupture. The lady has since borne another child.

In the very proper desire for early diagnosis, and salpingectomy before rupture, not much reliance can be placed on the size of the uterus. The uterus does enlarge more or less, according to the proximity of the arrested pregnant ovum:

if in the isthmus, near the uterus, the enlargement may be appreciable; but if the arrest is in the fimbriated end, there may be no uterine enlargement, or not one which can reliably be determined. Moreover, who can say, in any case with whose pelvic condition he is unacquainted, whether an apparent uterine enlargement is not simply due to subinvolution?

In cases of suspected ectopic pregnancy wherein there have been previous attacks of pelvic inflammation, diagnosis is always much more difficult, especially to one who has not known and dealt with the particular case before, and who is therefore ignorant of previous pelvic conditions. Under such circumstances, who can be reasonably sure whether irregular bleeding or staining is due to ectopic pregnancy, or to an exacerbated inflammation? Who can be reasonably sure whether a tender mass is a tube swollen by a growing ovum, or a mass of infective origin? Who can be sure that tubal pregnancy and exacerbated pelvic inflammation may not co-exist? May it not be agreed that in some cases the diagnosis of unruptured tubal pregnancy can be made with reasonable certainty; and that in other cases, particularly among the hospital class, the diagnosis between tubal pregnancy and chronic pelvic inflammation is difficult and often obscure? The latter type of case can only be watched and studied closely; and finally, when the abdomen is opened, the most conscientious and experienced surgeon must be expectant of occasional surprise.

The time when the engaged trained obstetric nurse should be in the patient's home is worthy of consideration. The rule always followed by the writer has been to have the nurse in the house one week before the calculated date of labor: the reason for this rule is that pregnancy may have begun just before the last menstrual period, from which the date of probable labor was computed; in this case labor is likely to occur one week earlier than the calculated date. This likelihood was exemplified in the subject of this case: in both labors which the writer attended the baby was born one week before the calculated date, and in both instances the nurse had arrived in time. Of course under this rule the nurse often may prove not to be needed so soon.

CASE LXVI

A nine-years-married woman of thirty-one, always well, had had four normal, full-term labors with three miscarriages intermixed. The catamenia were established at fourteen, and had always been normal. The latest period occurred September 4 to 10, and was rather scanty, although prolonged. The woman began to flow again on September 24, and had continued dribbling irregularly up to her admission to hospital on October 9: she had had lower abdominal pain for the preceding five days; but she did not definitely locate it in her history, and gave no idea that it was spasmodic in character.

Diagnosis. — The perineum was multiparous, and the cervix bilaterally torn. The uterus was retroverted and not replaceable, being apparently embedded in exudate. There was slight tenderness in both lower abdominal quadrants, and marked tenderness in the right vaginal vault; but no mass was made out. There was a slight brownish vaginal discharge. A careful surgeon always weighs the possibility of an ectopic pregnancy in any such case as this; but the evidence in this case seemed entirely inconclusive, and the condition was regarded as an exacerbation of old pelvic inflammation about which the patient had forgotten, and of which she gave no inkling in her history.

Treatment and Result. — The woman was kept under observation for a week. The temperature was normal; but in view of the pain, tenderness, and displaced uterus it was decided to open the abdomen. After median hypogastric incision an unruptured tubal pregnancy was found on the right: there was evidence of previous tubal infection, presumably obstetric. A slight amount of free blood was found in the pelvis, and blood was oozing from the fimbriated end of the pregnant tube. The right ovary was cystic and was removed with the corresponding tube: the left tube was normal; the left ovary was also cystic, and was largely resected, only a small fragment being left. The uterus was freed and suspended, and the abdomen closed in layers with-

out drainage. After a normal convalescence the patient was discharged on the sixteenth day, with the right side of the pelvis empty: on the left was a non-tender mass of post-operative exudate.

Subsequent History. — The woman had another pregnancy two years later, from the small fragment of the resected left ovary; she went to term and had a normal labor. The following year she again miscarried.

Comment. — It is a noticeable clinical fact that in most cases, in operating for the removal of an unruptured pregnant tube, some free blood will be found in the peritoneal cavity. Indeed there is no reason why the tube should not leak both ways, and dribble from the fimbriated end as well as through the uterus. Of course when the ovum is near the fimbriated end, and the tube is in the way of aborting it into the pelvic cavity, there may be a considerable amount of intra-pelvic bleeding, and the case may simulate tubal rupture.

The above case illustrates very well the uncertainties of diagnosis. The possibility of tubal pregnancy was considered; but thought unlikely; and the pelvic examination in no way suggested such a diagnosis: fortunately conditions were such that after a week of observation it was thought best to open the abdomen, and thus the error in diagnosis was discovered in time.

CASE LXVII

The house surgeon telephones from the hospital about midnight that a woman has just been brought in by police ambulance, whose case he must in duty report: she was thirty-five, had had three children and several miscarriages. She had gone over one period, and presumed she was pregnant again, when she began to have slight discharges of blood, but with no pain; the bleeding continued off and on, and she feared she might miscarry, as she had done before. The time came for the next, the second, period; but it did not appear; instead, she had a little staining, and it passed over. Shortly after, she had a sudden attack of sharp pain in the left lower quadrant, which sent her to bed, and a doctor was called, who gave her something under the skin. She was up in two or three days, but continued to pass a slightly bloody discharge: a week later she had a second attack of sharp pain in the same place as before; she felt faint and queer, and thinks she must have fainted away. When she came to herself the neighbors were there, and said a doctor had been there and said he would send an ambulance to take her to the hospital. The house surgeon said she had in a measure recovered from her obvious shock, and had a fairly good pulse of 116; she was pale, however. He had not made a vaginal examination, but noticed there was blood in the vulval hair. On abdominal examination he had found dulness in the left flank, which in a measure shifted on change of position. In reply to inquiry he said his diagnosis was ruptured ectopic pregnancy, and to this diagnosis the writer agreed from the history alone, and directed that the patient be prepared for operation.

Operation and Result. — When seen shortly afterwards the patient seemed in condition to warrant immediate operation. She had recovered fairly well from her peritoneal shock, and had a regular pulse of 108, of fairly good quality. When the abdomen was opened to the peritoneum, the dark color of the latter showed clearly that there was blood clot within. When this blood was scooped out, the ruptured, but not then bleeding, left tube was tied off and removed.

Inspection of the right tube revealed what looked to be a pregnancy on that side, — a dark swelling of the ampulla the size of a pullet's egg. This tube, therefore, was also removed, and was later reported to be a hæmatosalpinx with no histological evidence of pregnancy. In twenty minutes the abdomen was closed and the patient sent to her bed for a shock enema and heaters. The convalescence was uneventful, and the patient was duly discharged well.

Comment. — In some cases, when it seems that the patient is no longer bleeding, it is well to defer operation for several hours, or as long as the patient gradually improves. But better still, in all cases of ruptured tubal pregnancy, transfusion should be arranged for, when possible. With the donor present and prepared, transfusion may be done coincidently with the laparotomy, when necessary; or it may be done by the operator-in-chief after the arrest of hæmorrhage, while his assistant closes the abdomen. It is the rule in the writer's clinic to secure a suitable donor as soon as a ruptured ectopic pregnancy is admitted: while transfusion is not always necessary, the donor is thus ready, if needed. Life has evidently been saved a number of times already in this way. Even in cases in which the patient might recover without transfusion, the performance of transfusion minimizes shock and expedites convalescence.

CASE LXVIII

A housewife of twenty-two had been married four years, and during that time had had two normal full-term labors. At her third pregnancy, supposed by her to have begun early in August, she began flowing on September 24 and continued to do so irregularly and in small amounts until October 5. On that day she was seized with severe pain in both lower quadrants of the abdomen, more marked on the left, unlike any that she had ever had before. The flowing now ceased, but the pain continued, becoming so severe that on October 17 she entered the hospital seeking relief.

Diagnosis. — On admission her skin and mucous membranes were pale, except for the cheeks, which were slightly flushed. Her general physical examination was otherwise normal. The abdomen was distended and tympanitic throughout, with moderate tenderness and some resistance in both lower quadrants. Vaginal examination showed the cervix and uterus of normal size, and pushed forward and to the left by a globular, elastic, tender mass occupying the right vault and bulging into the posterior cul-de-sac. There was a slight, blood-tinged discharge from the cervix. Temperature 100° F.; pulse 108; white count 14,000; hæmoglobin 75 per cent. The diagnosis of pelvic abscess was made and colpotomy advised.

Operation and Result. — At operation the bulging mass proved on incision to contain a large amount of dark blood, with many clots. Some clots which could be felt high in the left vault were not removed, for fear of breaking through into the peritoneal cavity: the wound was packed with gauze. For a week the patient's temperature was elevated, never above 101°. It then fell to normal, and she made an uninterrupted convalescence. She was discharged on the seventeenth day, with the uterus in normal position, but the posterior vault filled with cicatricial adhesions.

Comment. — Although no chorionic villi were found by the pathologist, this case seems unquestionably one of tubal pregnancy, with rupture between the folds of the broad ligament, and formation of extra-peritoneal hæmatocele. In

these cases the hæmorrhage is usually much restricted and seldom serious in its effects; but sometimes the posterior layer of peritoneum is pushed backwards and upwards by the escaping blood, and occasionally such a case ends fatally. If the hæmatocele is small, it may absorb or become organized; but there is always a danger of its becoming infected. If not small, it is likely to cause pain and pressure symptoms, and is liable to break down. In either case the large hæmatocele is best treated by vaginal section, and gauze pressure drainage until the discharge ceases and the cavity shrinks.

It is by no means easy to differentiate between pelvic hæmatocele and abscess, as the above case history shows; but although the diagnosis was not correctly made, the treatment, fortunately, was effective and successful. The following case, however, will show that colpotomy is not always attended with satisfactory results.

CASE LXIX

A housewife of forty had been married for twenty years, and during that time had had five normal full-term labors and one instrumental delivery, with two accidental miscarriages interspersed. She had her last regular period August 1: she began to flow again on September 18, and flowed intermittently for a week. On September 28, she began to have sharp and irregular pains in the right lower quadrant of the abdomen. She entered the hospital on October 1st.

Diagnosis. — On admission, her general physical examination was normal, except for the abdomen, which showed tenderness and spasm in the right lower quadrant. Vaginal examination showed a multiparous perineum, and a hypertrophied cervix, with bilateral tear, slightly patulous. The fundus of the uterus was not made out, on account of abdominal spasm. The right vault showed a tender resistance extending into the posterior cul-de-sac, but without bulging. There was a profuse dark bloody discharge. Temperature 100.6°; white count 12,800; hæmoglobin 80 per cent. The diagnosis of exacerbated chronic right salpingitis was made, and the patient placed on the usual palliative treatment.

Treatment and Result. — The temperature soon fell to normal. The oozing of blood, and the irregular pains, however, continued, and there gradually developed in the right vault an elastic, slightly fluctuant mass, the size of a baseball. The further diagnosis of pelvic abscess was made, and October 21 colpotomy was performed, with evacuation of a large amount of dark, tarry blood-clot, but no pus. The cavity was drained with gauze. The patient drained profusely a dark, bloody serum, and on the following day developed a temperature of 101°. This continued for three days, with increasing general abdominal distention and tenderness.

On October 24 a median hypogastric laparotomy was performed. The peritoneal cavity was found full of dark clotted blood, the *left* tube was found to be the site of a ruptured ectopic pregnancy, and was removed. The abdomen was

closed with drainage. The patient's condition grew rapidly worse, and she died on October 26.

Comment. — Perhaps more weight ought to have been given to the intermittent flowing, as a concomitant sign of ectopic pregnancy. Still, patients with pelvic inflammation are frequently observed to bleed in the same way. Of course when colpotomy was done the error in diagnosis was discovered. Had the rupture of the tube been at the mesosalpinx, and the blood effusion extra-peritoneal, the hæmatocele might have been successfully dealt with by vaginal section. And had the supposed inflammatory mass been dealt with by abdominal approach, the issue might have been favorable. It was a surprise to find the left tube the seat of the arrested pregnant ovum: it was found to be prolapsed and adherent behind the uterus; but bimanual examination had shown the resulting mass to be on the right side.

Altogether this case is not one to be proud of; but all teachers know that often more is learned from the retrospective consideration of mistakes, than from the satisfied contemplation of successes.

CASE LXX

A married lady of thirty-one, resident in another State, had been under the writer's care from time to time since her girlhood, for troubles, however, in no way relevant to her condition when she consulted him in a given May. She had had one child five years previously, under the care of a physician in the town where she lived, but had never miscarried. She had come from her home for advice and treatment for backache, pelvic heaviness, and moderate menorrhagia. Aside from these symptoms and nervous debility she had no complaint.

Diagnosis. — Examination disclosed no general functional or organic ailment, except nervous weakness and bodily fatigue; but the uterus was retroflexed, with the fundus deviated to the left, — a retro-latero-flexion.

Treatment and Result. — The pelvic tenderness was relieved with douches and vaginal tampons, the latter so applied as to raise the uterus, which was not adherent. In two weeks the uterus was thus partly replaced, and a soft rubber lever pessary was fitted. Five days thereafter she menstruated without discomfort, for three days; and later the uterus was found to be in normal position. A hard rubber pessary was then adjusted, and shortly afterwards she returned home, much improved, with instructions to continue the daily period of rest, the malt, and tonic treatment, which had already greatly benefited her general health.

Subsequent History. — Nothing was heard from the patient for two and a half months, when the excellent local physician held a consultation with the writer by long distance telephone. The classical symptoms of unruptured ectopic pregnancy were clearly stated, and it was agreed by local observer and consultant that the diagnosis was so obvious that the abdomen should be opened without delay. The writer could not conveniently leave his engagements to perform the clearly indicated operation, and a general surgeon was called by mutual agreement. The surgeon's finding was indeed an ectopic pregnancy; but the ovum was arrested in the interstitial part of the tube, and it was judged from menstrual

history and examination of the uterine cornu that it was about two months developed. The diagnosis of interstitial tubal pregnancy being established, the surgeon was in doubt as to what had best be done; he naturally hesitated to remove the uterus in a married woman of thirty-one, yet he realized that there was great danger of rupture when the pregnancy had advanced to four or five months. Uncertain how best to proceed he did nothing, and closed the abdomen.

A month later the writer saw the patient in her home. The abdominal incision had healed; the patient was to a high degree neurasthenic; the interstitial tubal pregnancy in the right uterine cornu had evidently advanced to three months; what was to be done? The patient was in no condition to submit to another abdominal section; it was practically certain that the right cornu would rupture in the fourth or fifth month; the husband was unwilling that his wife should leave her home; the nearest surgeon was fifteen miles distant. The husband was urgently advised to place his wife in a Boston hospital, where she would be under observation, and where prompt surgical aid would be available in the event of rupture. Of course it was realized that there were two possibilities other than cornual rupture: the tube might abort into and through the uterus; the ovum might gradually develope into the uterus, and the pregnancy proceed normally; but naturally the writer could not take the chances that either of these two possibilities would result. It was finally decided, as the husband would not accept the advice given, that the case should be treated expectantly, and should be seen a month later by the writer.

Six weeks later the writer was able to visit the patient, when she was presumably four and a half months pregnant. The patient's general condition had markedly improved; she was up and about her affairs. Careful palpation of the uterus showed that the enlargement at the right cornu had subsided; the uterus felt symmetrical; the lady had just recently felt slight fœtal motion; it seemed that the proximal, uterine, opening of the Fallopian tube had gradually expanded and that the fœtal sac had grown and developed into the

uterus. It was decided to thank God, and do nothing. In due time the lady was delivered normally of a son.

About five years later this lady again sought advice, with symptoms of chronic appendicitis, — having apparently had an acute attack three months before: the uterus was again found to be retroverted and retroflexed, the earlier pessary having been discarded at her last pregnancy. It was decided to open the abdomen. The thickened appendix, six inches long, was removed, the cystic left ovary resected, and the retro-displaced uterus suspended. Ten months later, again visiting Boston, she had gained fifteen pounds; the uterus was held suspended; the general health was excellent; she had symptoms of discomfort only when overtired.

Comment. — The fecundated ovum, when arrested, usually finds lodgment in the isthmus or in a fold or diverticulum of the ampulla, so that interstitial tubal pregnancy is relatively very rare. Sometimes, when the diagnosis is made, the product of conception is curetted away; sometimes the tube aborts through the uterus; if the pregnancy goes on in the tube, the cornu is practically sure to rupture in the fourth to fifth month, — later than in isthmic or ampulla arrests. Evidently, as shown by the case above cited, there is another possible issue, — the growth and passage of the fœtal sac into the uterus, with continuance of the pregnancy.

What might the general surgeon have done, when he correctly diagnosticated the condition presented to him? He might have removed the uterus; that would have been a pity. He might perhaps have broken up the fœtal sac by taxis, and so to speak milked it into the uterus, to be cast off. Better still, he might have done a Cæsarean section on a small scale, removed the ovum from its bed, and skilfully closed his cornual incision. He thought best to do none of these things, and the lady bore a living son: *finis coronat opus!*

CASE LXXI

A woman of thirty-three, born in Canada, married eight years, had had two children, in 1903 and 1905, with normal labors and puerperia; she had never miscarried. The menstrual history was not noteworthy, and the last period the patient said had occurred three weeks previously. The present illness began two weeks before entrance to the Boston City Hospital in 1907; during this time there had been sharp intermittent pain in the rectum near the anus, not aggravated by defæcation, and a continuous dull ache over the entire abdomen. The woman had had one chill, and had vomited two or three times. Two weeks before there had been a similar attack, on which the patient remained in bed for two hours, and found relief with hot-water bottles. Two months before entrance, and again after the last supposed menstruation three weeks before admission, the patient flowed intermittently for a week after the regular period had ceased.

Diagnosis. — On admission the pulse was 128, and the temperature 100.2° F. General physical examination showed no abnormality, except a cardiac systolic murmur. The abdomen was lax, tympanitic, and not tender; but bimanual examination, besides the traumata of parturition, revealed a soft, cyst-like, median mass rising from the pelvis to within 6 cm. of the umbilicus. In the pelvis, to the right and posterior, was a soft, sausage-shaped, sensitive mass connected with what felt like a cyst. The uterus was not differentiated, and was thought to be concealed by a superimposed cyst. The white blood-count was 13,000: the hæmoglobin test showed 70 per cent. Neither the history nor the physical examination seemed to the writer and to several colleagues to warrant a diagnosis of pregnancy, either tubal or uterine; and the probable diagnosis made was ovarian cyst with twisted pedicle, with supervening inflammatory process. In the face of this false diagnosis, however, the satisfaction remains that the treatment pursued was the most appropriate for the condition found.

COINCIDENT INTRA- AND EXTRA-UTERINE PREGNANCY

FIG. No. I. Fœtus expelled from uterus four days after operation for extra-uterine pregnancy.

FIG. No. II. Cephalic extremity of fœtus removed from Fallopian tube in which extra-uterine pregnancy had taken place.

FIG. No. III. Fallopian tube in which extra-uterine gestation took place. The tube wall has been pulled away from the products of conception, showing the point of attachment and pedunculated appearance of the latter. At *A*, the free extremity of the products of conception, the fœtal membranes can be seen.

Operation and Result. — On opening the abdomen the cyst-like mass was found to be the uterus, four months pregnant; and the supposed thickened and twisted pedicle was seen to be a pregnant tube surrounded with from four to six ounces of blood-clot, forming a mass in which the vermiform appendix was involved. Taking especial care to disturb the uterus as little as possible, the writer removed the appendix and the tubal mass, and closed the incision. On the same evening the fœtal membranes ruptured; four days later a slightly macerated, four months' fœtus was cast off spontaneously, and the uterus was curetted. The subsequent convalescence was uneventful.

The intra-uterine fœtus had apparently been dead two or three days, and if so, was alive at the time of the removal of the partly aborted tubal pregnancy. In a majority of the published records, the disturbance of one of the twin pregnancies, usually the extra-uterine, has ended the other; and such was the result in this case, in spite of every effort to ensure the continuance of the intra-uterine pregnancy.

Comment. — Thus far only two cases of coincident extra- and intra-uterine pregnancy have been observed in the Gynæcological Clinic of the Boston City Hospital, and both occurred in the same year, 1907. The specimens from the case above recorded were carefully studied by the Pathological Department, and the very valuable report is appended:

Pathological Report.

Gross Description. — The specimens are four in number: a Fallopian tube, a small piece of soft, grayish, gelatinous tissue, a fœtus, and the vermiform appendix.

1. The Fallopian tube measures 8.5 cm. in length. It has been opened by a longitudinal incision throughout its superior surface and has been stripped back from its contents.

There is considerable difference in the size and general character of the proximal 2 cm. and the remaining distal portion of the tube. The proximal portion shows little change. It averages 8 mm. in diameter, the mucous surface is soft and glistening and its lumen is completely shut off from that of the remainder of the tube by a sharp constriction.

The lumen of the distal 7 cm. of the tube is considerably enlarged and contains a circular, elongated, rather firm and elastic mass, which is firmly attached at the extreme proximal end of the greatly enlarged portion of the lumen of the tube, into which it hangs as a pedunculated mass. This mass measures 1 cm. in diameter at its point of attachment. Beyond this point it rapidly increases in size, measuring 3.5 cm. at its middle and distal portions. Its external surface is slightly granular, light gray to dark red, and attached to it are a few dark red, fragile tags. The distal extremity of the mass is somewhat depressed (funnel-shaped) and is lobulated.

The glistening appearance of this lobulated extremity is due to a thin, delicate membrane, which lines it and hangs down from its free edge.

On section the pedunculated mass described above shows the following picture: The proximal 6 cm. is composed of grayish, elastic tissue throughout which are small, dark red, rather soft areas. The distal 2 cm. consists of a dark red, elastic substance which is sharply demarcated from the proximal portion. The proximal portion resembles placental tissue; the distal, blood clot, which has formed about the placental tissue and which has separated the veil-like membranes from their placental attachment.

2. In the region of the distal extremity of the Fallopian tube there is a small piece of grayish, gelatinous tissue, which measures 0.9 mm. by 5 mm. by 9 mm. Its surfaces are smooth and glistening except at one point where it is torn. The general shape of this specimen is hemispherical. At one point there is a slight depression in the surface. Just below and to each side of this there is a semi-opaque area 1 mm. in diameter. Its surface is semi-transparent and shining through it is a dark bluish area. This specimen is the cephalic extremity of the fœtus which has developed to the point where the eyes are well differentiated.

3. The fœtus was received at the pathological laboratory four days after the other specimens. It measures 18 cm. in length, is dark red, somewhat softer than normal and shows evidence of having been dead at least two or three days

before being expelled from the uterus. The head, body, and extremities are well formed. The sex is easily determinable as that of a female.

4. The vermiform appendix measures 5 cm. in length. Its external surface is smooth and glistening. The blood vessels are not injected. The mucous membrane is normal.

Gross Diagnoses:

Extra-uterine pregnancy (tubal).
Cephalic extremity of small fœtus. (Age questionable.)
Fœtus 18 cm. in length (age about four months).
Normal vermiform appendix.

Microscopical Findings. — Sections from the grayish tissue within the lumen of the Fallopian tube show chorionic villi, large pale staining cells with rather small vesicular nuclei (decidual cells) and an occasional multinuclear cell (giant cell of pregnancy) and polymorphonuclear leucocytes (acute inflammation).

The cephalic extremity on section shows embryonic muscle-cells and cartilage, the nuclei of which, for the most part, fail to take the stain.

The vermiform appendix shows small groups of lymphocytes and eosinophiles in the submucosa (slight chronic appendicitis).

Summary and Conclusions. — This is, unquestionably, a coincidental intra- and extra-uterine pregnancy.

Writer's Further Comment. — The interesting question arises whether we have in this case an instance of superfecundation, the fertilization of the two ova taking place at or about the same time; or of superfœtation, in which several months may intervene between the two impregnations. The uterine cavity does not become completely obliterated until the reflexa and the vera fuse at the end of the third month of pregnancy; after that time superfœtation is impossible, but prior to that period its theoretical possibility must be admitted (Williams). On the other hand, superfœtation is not considered possible in this connection by most investigators (Young). Simpson concludes that there is no positive proof that the ectopic ovum may become fecundated after the uterine, as the difference of size is probably due to

insufficient nourishment of the former. In view of the difficulty of classification in the case reported, the following discussion of the subject by Dr. Emmons and associates in the Pathological Department is of interest:

Discussion. — Coincidental intra- and extra-uterine pregnancy might take place at or about the same time; the intra-uterine pregnancy might precede the extra-uterine or the extra-uterine pregnancy might precede the intra-uterine.

In coincidental extra- and intra-uterine pregnancy it is generally conceded that the coincidental intra-uterine and extra-uterine gestation occur, as a rule, at or about the same time. The difference in the size of the two fœtus is due to the adverse conditions offered for growth without the uterine cavity.

The following facts might make it possible that in this case the extra-uterine pregnancy took place some time after the intra-uterine pregnancy. 1. It is not an anatomical impossibility. 2. This patient was regularly exposed to the possibility of becoming pregnant. 3. The tissues of both fœtus stained well, suggesting that neither had been long dead. 4. The fœtus within the uterine cavity corresponded to one at about the fourth month of normal gestation; the fœtus within the Fallopian tube might easily be mistaken for one at about the sixth week of normal pregnancy. 5. The placental tissues of the ectopic gestation covered a considerable area and their blood supply was good, affording sufficient nourishment to have developed a fœtus within four months considerably larger than this one. 6. The placental site within the uterus, as determined by curetting, was upon the side opposite the tube that contained the ectopic gestation, making access to this tube possible.

CASE LXXII

A quadrigravida of twenty-three entered hospital six and a half months pregnant, with a history of slight irregular bleeding for the past two weeks. Labor had already begun; and as the pains increased, hæmorrhage became more marked. There was no history of trauma to account for the bleeding by a separation of a normally seated placenta: nor was there any history to explain why the woman took in labor at six and a half months. She had had two normal labors, the second with twins: her third pregnancy had terminated in an unexplained six months miscarriage.

Diagnosis. — In the absence of history of trauma or of violent coitus, there was no reason to believe that the bleeding came from open sinuses under a partly detached, normally seated placenta: even if the placenta dipped somewhat into the lower segment, there was no apparent reason why there should have been a placental detachment two weeks before the advent of premature labor pains. The presumption seemed reasonable that the placenta was prævia. Examination disclosed an os two and a half inches dilated, and a complete prævia: the fœtal heart was not audible, and no motion was felt.

Treatment and Result. — As the oral dilatation was not complete, and as the fœtus, even if living, was not viable, it seemed judicious to the house surgeon to use a gauze pack, in the hope of restricting bleeding and of promoting complete dilatation and subsequent spontaneous fœtal expulsion. But blood soon oozed through the perhaps imperfectly placed gauze; and when seen by the visiting surgeon, it seemed best to complete the dilatation manually and empty the uterus: the placenta was therefore removed *in toto*, and the fœtus delivered by internal podalic version: the fœtus was stillborn and macerated. The bleeding ceased with delivery of fœtus and placenta, and the patient had not lost enough blood to need transfusion. She made an uneventful convalescence, and was discharged well, on the fourteenth day.

In view of the previous miscarriage at six months and of

the present intra-uterine death and maceration, a Wassermann test was made for syphilis, but the test was negative.

Comment. — Blood transfusion may be as necessary and desirable for the acute anæmia following placenta prævia as in that coincident with ruptured tubal pregnancy. It is therefore judicious promptly to secure a donor in all cases of placenta prævia, and to be ready to transfuse when necessary. Of course, intra-venous saline solution may keep the heart pump from "running down", and thus preserve life; but after serious hæmorrhage, volume of vascular content is not alone needed, but sufficient oxygen-carrying red corpuscles.

CASE LXXIII

A multigravida of thirty-four had had seven normal labors, and when seven months advanced in her eighth pregnancy was seized one morning with a profuse hæmorrhage: she was packed by the physician who saw her, and by him sent in to the writer's clinic.

Diagnosis. — An ectopic seating of the placenta should occasion no surprise in the case of an octigravida in the less well-cared-for stratum of women; and in the present case there was no reason to suspect a cause of hæmorrhage, other than the expansion of the lower uterine segment away from a placenta therein seated. On removing the packing the cervix was patent to two fingers, and the placenta was found overlapping about half of the internal os: the presenting head was felt to one side of this partial prævia; but the fœtal heart was inaudible.

Treatment and Result. — In the absence of bleeding there seemed to be no reason for a hasty manual dilatation and delivery; and yet it was thought to be for the best interest of mother and fœtus to promote delivery. The cervix and vagina were therefore tightly packed with gauze to incite uterine contractions. Two hours later blood stain appeared through the gauze; and on the removal of the latter, the os was found to be fully dilatable. The premature fœtus was then easily delivered by internal podalic version and manual extraction, and it survived for two hours. The mother did not lose a serious amount of blood: and she was discharged well, two weeks later.

Comment. — The fœtal prognosis in placenta prævia is always very dubious. Maternal hæmorrhage requiring that the uterus should be emptied often occurs in early fœtal viability, if not before; and if not already mortally asphyxiated before the time of delivery, even a slight additional maternal blood loss at delivery is likely so far still further to diminish fœtal oxygenation as to result in stillbirth. Moreover, the already partly asphyxiated, immature baby easily succumbs to the shock of rapid extraction, and even if born alive has insufficient vitality to maintain independent exis-

tence. When, therefore, the placenta is ectopic, it is generally best to follow that line of treatment which will best conserve the maternal welfare, exactly as in that form of ectopic pregnancy in which the fecundated ovum is arrested in the Fallopian tube.

Case LXXIV

A young wife of twenty-six had had three normal full-term labors. When nearly at term in her fourth pregnancy, she had a slight, uterine hæmorrhage, for which she was packed by the out-patient service of the Boston Lying-in Hospital, and then sent in to the writer's clinic in the early morning. She was kept quiet in bed; and as the bleeding was evidently controlled for the time, the packing was not disturbed. During the day she began to have active labor pains, induced, presumably, by the tight gauze pack: at five o'clock in the afternoon the gauze was expelled; and as the cervix was only partly dilated, another pack was inserted. At ten o'clock this pack also was expelled with slight bleeding. The cervix was then found to be two inches dilated, and a marginal prævia was felt on the posterior wall. The fœtal heart was 140, and of good quality. It was then thought best to complete the dilatation of the softened cervix and deliver. Accordingly the membranes were ruptured, the anterior arm drawn down and a fillet applied at the wrist: internal podalic version was then performed. During the version and extraction the anterior arm was prevented from extending above the head by traction on the fillet.

Result of Treatment. — The mother lost considerable blood during the manual dilatation and extraction, and left the table with a pulse of 140. She quickly rallied, however, and made a good convalescence. The baby weighed eight pounds and nine ounces, and was discharged well, with its mother, on the sixteenth day.

Comment. — It is a great advantage when bleeding can be held in check either with the gauze pack or the hydrostatic bag. Time can thus be gained for the softening and obliteration of the cervix and at least its partial dilatation: complete expansion of the cervix can then be effected with the fingers with far less risk of the serious tears which are pretty sure to take place in the early *accouchement forcé*. In the marginal prævia sometimes the bleeding can be entirely controlled with bag or gauze until the cervix is fully dilated, when under good pains normal delivery may take place, intervention

being necessary only when indicated by the signs of fœtal danger.

The old method of effecting bipolar podalic version through a small cervical dilatation, and drawing down a leg and thigh to serve as a pressure tampon is not to be commended: it is quite effective in controlling hæmorrhage; but the fœtal loss is very great, in the long, slow extraction. Far better is the method followed above, with the use of bag or gauze, and rapid extraction after sufficient expansion of the cervix.

CASE LXXV

A physician's wife, who had been married seven years, first became pregnant in her thirty-ninth year. She was a woman of excellent general health, had a normally developed pelvis, eliminated well, and had no disturbance of metabolism during pregnancy. There was a suspected, but not confirmed, diagnosis of twins, because it was thought three large parts were felt. About four weeks before the predicted date of labor, at four o'clock A.M., she was awakened from sleep by bleeding from the vagina: there was no pain, and she had gone to bed perfectly well.

Diagnosis. — Seen two hours later, the bleeding had stopped. Vaginal exploration found the os open to one finger, which felt the edge of the placenta, — a marginal prævia. The examination started fresh bleeding, and four ounces were lost: a firm vaginal gauze pressure pack was applied. Palpation disclosed a breech presentation, S. L. A., and what was thought to be another head so placed as to indicate a second fœtus presenting S. D. P.; only one fœtal heart could be heard, however.

Consideration of Treatment. — With the diagnosis of marginal prævia thus clearly made, the question of treatment was carefully considered. It seemed best that the lady should be delivered, indeed she had already begun to ooze through the vaginal pack. The several methods were quickly passed in review. A gauze pack might be placed in cervix and vagina, and a very tight abdominal swathe applied, with the idea that this pressure would control the bleeding and induce labor: this is a much-liked method in the Dublin Rotunda, and often has good results, especially in multiparous women of easy dilatation; but in this case under consideration, blood was already oozing through the pack. Then with a little additional instrumental dilatation, a hydrostatic bag could be introduced, preferably in this case intra-ovular, which might be expected to control bleeding by pressure, and induce labor: this method often works well; but the patient was thirty-nine, several bags might have to be used, of successively larger size, and the

manipulation might result in considerable blood loss. Thirdly, manual dilatation of cervix and vagina might be done, and the baby or babies extracted: this method is often successful in multiparous women and in some young primiparae; but this patient had bled four ounces at the diagnostic examination, she would doubtless be hard to dilate; even if the baby or babies were small, the extraction would not be rapid, and moreover a small premature baby does not bear an easy extraction as well as a full-term baby a hard one. On the whole, it seemed probable that by any of these methods the woman would lose more or less blood, and the baby have a poor chance: a woman of thirty-nine can't afford to take chances with what may be her only baby. Therefore Cæsarean section was advised for the reasons already intimated, — marginal prævia; mother in good condition, but a late primigravida; viable and savable baby; probable loss of blood in the various methods of dilatation of soft parts no longer easily dilatable; relatively poor chance of safe delivery of a premature baby, especially a breech, in what might have to be a hurried extraction from a bleeding mother. The advice of Cæsarean section was accepted.

Operation and Result. — On opening the peritoneum a small sessile myoma was seen near the median-line; this had been taken for a fœtal small part. In the right lateral upper quadrant was found an interstitial myoma, as large as a fœtal head; this it was which had given rise to the probable diagnosis of twins. The single, breech baby was delivered, the marginal prævia also: there was practically no bleeding. When the baby was removed from the uterus, the large myoma debouched into the cavity, and then the writer was especially thankful that he had elected to deliver by abdominal section. Myomectomy was performed on this and the smaller, sessile, extra-mural neoplasm, and the uterus and abdominal wall closed in the usual manner.

The four weeks premature baby weighed six and a half pounds, and did well on percentage modified milk feeding. The mother was making an excellent abdominal convalescence, when on the tenth day she developed a phlebitis in

the left calf, and on the thirtieth day in the right: from this double phlebitis she duly recovered, however, and was discharged, with the baby, in good health and condition.

Comment. — The presence of the large myoma had never been suspected in this case, as it had never caused symptoms. Probably it was small before pregnancy, and grew in the later months. It may have played a part in influencing the ectopic placental site, and the low placenta a part in determining the fœtal presentation; for when the placenta encroaches on the pelvic brim, the head does not find an engaging resting place, and is very likely to be displaced, while the breech descends.

It is interesting to consider what would have been the fate of the myoma and its host, had the baby been delivered by the birth canal. Presuming that the placenta would have been skilfully delivered, there might have been serious, if not insuperable, hæmorrhage from the interference of the tumor with normal uterine retraction. Had there been no undue bleeding, however, the medical attendant would probably have been puzzled by the size of the uterus. Finally, in the involution of the uterus, the then intra-uterine growth, to some extent pedunculated, might have had its blood supply cut off and necrotic changes have followed: the prognosis would not have been good under these very possible contingencies.

CASE LXXVI

A housewife of thirty-five in her fifteen years of married life had had seven children, born normally at full term, and one miscarriage. Her last child was born in May: the catamenia recurred in July and August, but ceased thereafter, and she supposed herself again pregnant. During the month of December she flowed irregularly at four distinct times, for a few days each time, and she was flowing slightly when she entered the hospital on the second of January. From her dates she considered herself not more than four and a half months pregnant.

Diagnosis. — The uterus was enlarged nearly to the umbilicus, and had rather a soft, boggy feel. The diagnosis seemed to lie between normal pregnancy with impending miscarriage, which it might have been, assuming an erroneous remembrance of the menstrual dates, although no fœtal heart sounds could then be heard; hydatidiform mole, assuming the pregnancy to be in accordance with the woman's dates; and a possible chorio-epithelioma. There was no elevation of temperature; the white count was only 6000; the hæmoglobin was 70 per cent. The patient was kept in bed under observation for two weeks, during which time the flowing ceased, and the uterus enlarged to a level with the umbilicus. The patient was sent home, with instructions to return should bleeding recur.

Four days later the woman re-entered with the statement that she had flowed almost continuously since going home. The flow was seen to be thin and pinkish, but contained none of the vesicular or grape-like bodies so characteristic of hydatidiform mole. The fundus, however, was by this time just above the umbilicus; and no fœtal heart could be heard, or fœtal parts or motions felt. The diagnosis of mole was made, based on the character of the discharge, mingled blood and water, even without the characteristic cysts; on the fact that the uterus felt boggy and was larger than it should be at the presumed date of pregnancy; and on the inability to hear or feel a fœtus.

Treatment and Result. — The cervix was dilated to an inch, under ether, and the cervical canal and vagina firmly packed with gauze: this started uterine contractions, and the next day a cystic mass, in appearance typical of hydatidiform mole, was expelled; with a dull curette a considerable amount of additional hydatid tissue was removed, and the uterus was irrigated and packed with gauze. The next day the temperature rose to 101° F., but returned to normal the following day and remained there. The woman made a good convalescence and was discharged on the twelfth day. The pathological examination showed no evidence of malignancy.

Comment. — The diagnosis of this form of mole is often extremely difficult. The cystic degeneration may affect only a part of the chorionic villi, the placenta may form, and the pregnancy go on; or, on the other hand, all the villi may be involved, and the embryo perish and be absorbed, as in the case above given. Unfortunately it is often impossible to know when the pregnancy began, and it is therefore difficult to be sure whether the uterus is relatively larger than it ought to be. Sometimes the diagnosis is greatly facilitated by the discharge of the characteristic cyst-like bodies, perhaps connected like a bunch of grapes. Of course the inability to make out a fœtal heart, or to feel the fœtal motion and usually palpable parts plays a strong part in the diagnosis. In doubtful cases, if the woman continues to lose blood, the indication would be to empty the uterus, even on uncertain diagnosis.

CASE LXXVII

A young Roumanian woman seeks advice, because of abdominal enlargement, and because of divergent opinions which have been given her as to its nature. She has supposed that she is pregnant, but realizes that the enlargement of the abdomen is much too great for the length of time she thinks she could be pregnant. She says she suffers physically only from the abdominal distention and from swelling of the legs; but she is much worried in her mind.

Diagnosis. — Inquiry elicits the statement that she has been married eleven months, but that she noticed a beginning enlargement of the abdomen four months before her marriage: this enlargement has progressively and steadily increased. The catamenia were regular until four months after her marriage, that is until seven months prior to this consultation; and after two months of amenorrhœa she began to have morning sickness. She thinks she is seven months pregnant, but knows she is too large for that: she has been told that she has an abdominal pregnancy or an intra-uterine pregnancy with hydramnios; she has felt no fœtal motion, and she doesn't know what to believe or what to do.

Examination shows no physical abnormality except an immense, symmetrical enlargement of the abdomen: the wall is œdematous in the hypogastric region, and there is some œdema of the legs. A catheter disposes of the possibility of an enormously distended bladder. The abdominal tumor is flat on percussion, and there is tympany in the flanks; the upper portion of the tumor gives a distinct fluid wave; no fœtal parts are palpable, no fœtal heart heard: it therefore seems unlikely that the abdominal tumor is a pregnant uterus overdistended with hydramnios: it is also clear that the tumor is not due to ascites. Renal or hepatic cysts are possibilities; but there are no symptoms pointing to affections of either kidneys or liver. By vaginal examination the cervix uteri is found to be crowded low in the pelvis, and is obviously softened: the visible mucosa has a bluish color. The amenorrhœa, morning nausea, softened cervix,

and blue discoloration give strong presumptive evidence of pregnancy; yet no fœtal heart can be heard, no fœtus felt. But the enormous tumor is not a pregnant uterus, but apparently an ovarian cyst, which perhaps obscures a pregnant uterus behind it. The patient is advised to submit to abdominal section, on the above stated probable diagnosis.

Operation and Result. — After median hypogastric incision, and visual and manual examination, it was clear that the tumor was a multilocular cyst of the left ovary. It was too large for delivery through a reasonable incision; therefore it was sought to tap and evacuate the several cysts: but the cyst walls were thin, and easily ruptured on the attempted puncture with a trocar, so that much of the cystic contents was spilled into the peritoneal cavity. When the cysts had been partly emptied and the field cleared, it was not difficult to recognize a six and a half to seven months pregnant uterus, previously hidden behind the neoplasm. The uterus was disturbed as little as possible; but the abdomen was cleansed with warm moist gauze, the broad pedicle of the cyst pleated off and covered with peritoneum, and the incision closed in layers. The convalescence was without untoward incident: there were some painful uterine contractions during the early days, and they were controlled with morphia. The young woman was allowed to go home in three weeks, feeling perfectly well, with a well-united abdominal incision, and with fœtal heart and motion clearly perceptible.

Subsequent History. — In exactly one month the young woman re-entered the Boston Lying-in Hospital, having been in labor nearly twelve hours. The breech presented, and a foot was prolapsed: as the fœtal heart seemed to the house physician erratic, he completed the dilatation and extracted a six-pound-and-nine-ounce baby. The patient made a normal convalescence, suckled her baby, and was discharged, well, on the fourteenth day. The abdominal scar was firm, and had borne the strain of labor without harm.

Comment. — Ovarian cysts complicating pregnancy may safely be removed without fear of inciting abortion, if only

the uterus is very carefully handled. A case comes to mind of a large cyst discovered and brought to the writer's clinic when pregnancy had advanced to four months: the patient did not abort after the removal of the cyst, and was safely delivered at full term. Small cysts may not cause dystocia, and indeed may not be discovered until after labor, when removal may be delayed until after the puerperal convalescence, unless axial rotation supervenes. Even when small cysts have prolapsed and filled the pelvis, unless they are adherent, they may be raised by taxis, and dystocia thus relieved. If the small cyst is adherent in the pelvis, the old treatment was to aspirate it and perhaps remove it after the puerperium: this procedure, however, is no longer approved; for although the cyst fluid may be bland and innocuous to the peritoneum, the growth may be a dermoid, and the cholesterin content of these cysts is very irritating to the peritoneum. If the cyst adherent in the pelvis is discovered early in pregnancy, it would seem best to remove this probable cause for later dystocia; but if not discovered until the later months, it would be wiser to wait until full term, then to deliver by Cæsarean section and subsequently to remove the cyst.

CASE LXXVIII

A secundigravida of thirty-five in her first labor four years previously had sustained tears of cervix and perineum which were subsequently repaired in hospital. When she reached full term in her second pregnancy the membranes ruptured the day before the pains began; this unfortunate loss of the hydrostatic dilating wedge, combined with the frequently observed diminished distensibility of the repaired cervix, seemed to be the cause of the length of the first stage, thirteen and three-fourths hours, which is long for a multipara. After the second stage had lasted an hour and a half the fœtus began to show signs of distress, both by slowed and irregular heart sounds and by the meconium-tinged liquor amnii. The pains were good, there was no relative disproportion between the pelvis and the fœtal head; but the position was O. D. P., and anterior rotation had not yet taken place. It was thought that in the interest of the child ether should be given, rotation completed with the hand, and delivery effected with forceps; but both the patient and her husband refused this treatment, in spite of explanation of the danger to the baby and of the unwillingness of the attendant to take the responsibility, if delivery were further delayed. Finally, after a second stage of two and three-fourths hours, the occiput rotated to the arch and the baby was born, as predicted, in a state of deep asphyxia: it had attempted respiration, had inspired mucus, and was resuscitated with much difficulty. The writer returned from this case determined never to attend the woman again, because of her unwillingness to accept his judgment and advice.

Comment. — The indication for the use of forceps in this case was very clear, — impending danger to the unborn baby; and the case well illustrates a difficulty which young physicians often encounter in obstetric practice among the uninstructed poor. It so happened that the writer was younger than his patient, and the latter had more confidence in nature than in the judgment of the young doctor. It is among this class of patients that wrinkles and white hair count for more than professional reputation and academic

position. It might be asked why the writer did not retire from this case, after another and better trusted physician had been summoned: he might very properly have done so; but having explained the impending danger and received assurance that the husband and wife would take their own chances, he concluded to stand by his guns, although with a ruffled spirit. At all events his services were sought by the same patient seventeen months later, and in spite of his previous determination he agreed to take charge of the third labor. He was summoned at 4 P.M.; as in the former case the membranes had ruptured the day before, and pains did not supervene until seven the next morning. The os was found fully dilated; and the presentation was shoulder and funis with arm prolapsed, Sc. D. A.: the funis had not prolapsed from the uterus; but as the brim was not occluded with a good ball-valve the presentation of the funis was not surprising.

Treatment and Result. — Two lines of treatment were open: the patient might be placed for a short time in a true knee-chest position, when the funis would doubtless drop away from the brim; then in dorsal position the arm could have been replaced, and bipolar cephalic version performed; the other procedure would be internal podalic version; and as the woman was a multipara with ample pelvis and fully dilated os, this method was chosen and performed after a fillet had been placed on the prolapsed arm. A seven-and-a-half-pound baby was thus delivered, and easily resuscitated; the pubic clavicle sustained a green-stick fracture, but united in a clavicular sling. As both mother and baby did well the writer did not regret that he had humbled his youthful pride, and made this couple his friends for life.

CASE LXXIX

A quintipara of forty, whose previous labors had been normal, was visited in her fifth labor at 7.30 P.M.: the membranes had ruptured at 5 P.M., and there had been moderate pains since then. Palpation revealed an O. L. A., the head was not engaged, but rested lightly on the girdle of contact at the brim. The fœtal heart, heard over the left lower quadrant, was 132; the rhythm was regular, but the sounds noticeably weak and indistinct. On making a vaginal examination the first thing noticed was a foot or so of feebly pulsating funis: the os was an inch and a half dilated. How long the cord had been prolapsed could not be told, but evidently sufficiently long to have suffered some compression between the head and pelvic brim.

Treatment and Result. — It was quickly explained to the surprised lady that she must unquestioningly submit to being hurt a little: she was helped to take a knee-chest posture, and the half hand was passed into the vagina. It was found that the head under gravity had dropped away from the brim, and it was not difficult to replace the cord, coil by coil, through the os, and drop it back into the uterus. The patient was then allowed to lie upon the side, and was made to strain hard for several quickly recurring pains; with the hand still in the vagina it was gratifying to observe that the head thus became well engaged and that the brim was occluded. The fœtal heart was then again listened to, and found to be beating loudly and strongly in marked contrast with the sounds first heard. The second stage terminated normally in an hour, the baby weighing eleven and a half pounds. By subsequent examination of the relation of the placenta to the opening in the membranes it was clear that the former had been attached low; furthermore the funis was found to measure thirty-six inches in length: so there had been three contributory factors to funic prolapse, — low placenta, long cord, and rupture of the membranes before the os had dilated and the head had flexed and engaged. The convalescence was normal except that as in

previous puerperia profuse lochia required small doses of ergot for several days.

Comment. — The old obstetric armamentaria contained a funis repositor, or a long, large, prostatic catheter to be used as such; but no instrument is preferable to the sentient hand. Some authorities recommend the Trendelenberg posture for funic reposition; but the knee-chest seems the more rational position. The former would be of service, however, when there must be delay in waiting for a consultant, for a woman cannot long maintain the knee-chest, and Trendelenberg would help to relieve the cord of pressure. Sometimes the funis cannot be replaced, especially in the presence of frequent second-stage pains and engaging head. The writer recalls such a case in which, with a high head the quickly recurring pains forced the replaced cord down again, and the woman was speedily delivered by internal podalic version. When the head is in the pelvis and the funis has slipped down by the side of head, through one of the sacro-iliac arches, unless the cord is suffering no perceptible pressure and the labor is evidently going to terminate very soon, it is best to deliver with forceps, taking care not to nip a loop of the cord between the head and the forceps blade.

CASE LXXX

A lady was taken in charge, during her regular attendant's absence in Europe, when she was six months advanced in her third pregnancy: there was no relevant history of importance, except that during her second pregnancy she suffered with varicose veins in both legs. She was in excellent general health, and her only complaint at this period of her pregnancy was a swelling of the labia majora accompanied by a painful sense of weight and distention. It was found that the veins of the vagina and labia majora were much enlarged and engorged, the latter being as large as a man's fist. The lady was kept in bed, and a firm compress was adjusted so as to exert an even pressure over the labia; for a few days pieces of ice, frequently renewed, were placed under the compress. At the end of a week the swelling had greatly subsided, and the labia were of nearly normal size: the patient was then allowed to be out of bed, although going over stairs was forbidden for a time, and she continued to wear a supporting compress.

During her eighth month the patient continued very well and was accustomed to take an almost daily drive without discomfort, and without visible ill-effects on the previously enlarged veins. It seemed, however, that she was unduly large for the supposed duration of pregnancy. At the beginning of the ninth calendar month she summoned the writer, thinking that her labor was imminent, although she had no true pains. Inspection showed the abdomen to be as large as ordinarily at full term: palpation revealed an apparently quite large fœtus in O. L. A. position. A second fœtus, although suspected, was not then detected, owing, it seemed afterwards, to the fact that this second fœtus was the smaller, and was lying in right posterior position, and masked by its fellow: two fœtal hearts were not heard. The os was found dilated to an inch and a half; but there were as yet no perceptible uterine contractions, and in two days the patient was up again, apparently in her usual health.

Two weeks later, at about the thirty-seventh week, at

2.15 A.M., the patient awoke and called her nurse: she complained of not feeling well and of difficult breathing; in fact she was soon obliged to sit up in order to breathe comfortably. Uterine contractions probably began before she awoke; and as the pains increased in severity, respiration gradually became more difficult: the husband noticed the embarrassed breathing, and wondered whether anything could be done about it. The writer was called at 4.10 A.M., and reached the patient at 4.40 A.M.: she was sitting up in bed, with a hurried respiration, and evidently in active second-stage labor. The face was pale, however, and not flushed as is customary in the second stage: nevertheless the true cause of the rapid breathing was not suspected, but was attributed to the apparent severity and rapidity of the labor pains. The pulse was weak and rapid. Vaginal examination, the patient lying down for the purpose, found a head bulging the perineum, and in two pains a male infant weighing six and a half pounds was born, occiput remaining posterior. As soon as the child was seen it was obvious that there must be still another *in utero*, as it was too small to have caused so much abdominal enlargement as found by previous palpation, and as only the usual amount of liquor amnii had escaped: this child already born must have been lying concealed behind a larger child in front of it.

Meanwhile the condition of the patient was alarming. Instead of relief to her respiration by the birth of the child, as hoped and expected, the breathing was becoming more hurried: the patient declared that she could not breathe lying down. The pallor increased: of course there was probably cyanosis; but by artificial light, cyanosis may be either not recognizable or mistaken for jaundice. The pulse became more rapid and irregular. Hypodermic stimulation with brandy and ether was immediately resorted to; and the husband was informed that it was a case of pulmonary embolism, and that the issue was probably hopeless. Stimulants gave some temporary benefit; but in fifteen or twenty minutes it was evident that all treatment was useless. The writer then turned and delivered the second fœtus as the patient was breathing her last, just forty minutes from the

time he had entered the house: the lady remained conscious until within two or three minutes of her death.

The second fœtus lay in O. L. A. position, and was the one felt on palpation: it was a girl weighing seven and a half pounds, and was asphyxiated beyond resuscitation. The first child cried soon after birth and throve. It is quite probable that if the second child had been turned and extracted immediately after the first one was born, its life would have been saved; but there was no time to summon assistance, and it seemed best to devote all efforts to the mother, as this condition is sometimes, even if rarely, recovered from.

Comment. — Although not confirmed by autopsy, the diagnosis of pulmonary embolism seems to be beyond question. Air embolism needs not to be considered, as the embolus evidently became lodged in a pulmonic vessel at about the beginning of labor, before the rupture of the membranes. No antecedent disease of the heart had been suspected or known to exist, whereby vegetations could have formed on the valves and subsequently furnished the fatal embolus. The source of the embolus will never be determined; but it seems most probable that it proceeded from a thrombus in one of the pelvic veins. From the known condition of varicosity in the visible veins of the labia majora, it is fair to infer a like condition of at least some of the unseen veins in the pelvis. A sluggish current in some one of these tortuous and dilated vessels must have furnished the thrombus from which the embolus proceeded, and caused the fatal issue in this tragic case. It is probable that the embolus was relatively small and that it lodged in one of the secondary branches of the pulmonary artery at about the time the patient was awakened by her initial pains of labor; the clinical history suggests a gradual propagation of the clot by thrombosis, with extension towards, and perhaps reaching, the heart.

CASE LXXXI

A physician's wife had had one normal labor and puerperium, and had been in the first stage of her second labor for about three hours when she began to bleed from the vagina, — not a profuse hæmorrhage, but a small, steady trickle. There was no obvious reason for this; she was in excellent health, had no heart lesion, had suffered no trauma. The head had been found, by external examination, to be presenting, O. L. A.

Further Examination. — Another palpation confirmed the previous diagnosis of fœtal position and presentation; the fœtal heart showed no change; the uterus was normal in contour, and was not abnormally distended. By vagina the cervix was found to be taken up; the os soft, and dilated to a diameter of two inches; the membranes were not ruptured, but bulged well with the pains; blood was trickling from between the membranes and the cervical rim, more in the interval between pains than during the contractions. The presenting head was still high, only lightly engaged: it could be felt through the membranes that the placenta was in no way over the dilating os. Careful palpation of the vaginal vault disclosed no appreciable fulness or bogginess on either side, and no unusual pulsation.

Diagnosis. — Whence came the bleeding? Certainly not from a cervical tear: it must come from uncovered uterine sinuses. It was thought unwise then to rupture the membranes to permit feeling for a marginal prævia, and it was known that the placenta was neither wholly nor partly over the os. The whole idea of any form of placenta prævia seemed extremely improbable, not only from the physical examination, but because there had been no earlier bleeding. Of course bleeding may not occur until the incidence of labor; but it is practically sure to show itself any time after the twenty-eighth to the thirty-second week. The diagnosis of placenta prævia was set aside as highly improbable. The cause of bleeding might be a partial separation of a normally seated placenta, and the blood be trickling from the thus opened sinuses and down between the membranes and the

uterine wall; but there had been no trauma to separate the placenta. And while it is perhaps true that a normally seated placenta may be disrupted by uterine contractions, that seemed very improbable in this case. Of course a normally seated placenta could be partly separated by descent of the baby and consequent traction on an absolutely or relatively short funis. But in this case the baby hadn't descended, and was still only lightly engaged.

The only other source of bleeding was the sinuses under a low seated placenta, that is, a placenta with its lower border below the contraction ring, in the lower segment, that part of the uterus which expands and canalizes in the latter part of pregnancy and in labor itself. If in this case the placenta were thus "low-seated", the clinical findings were clearly explained: this was the diagnosis made, subject to later confirmation; and if this diagnosis were correct, it was to be expected that the bleeding would cease with the descent of the head and the consequent snug pressure of the fœtus on the low placenta.

Subsequent History. — Meanwhile the blood loss had not been sufficient to affect the patient's pulse or color. But the pains had been increasing in severity and frequency: in about an hour from the time of the visit the os was fully dilated, and the membranes were ruptured. The head quickly descended, and the bleeding ceased. The second stage lasted only another hour, and an eight-pound, non-asphyxiated baby was born. The third stage was not hurried, and particular care was taken not to tear the membranes. Placenta and membranes were apparently extruded intact after five contractions, and were examined in the light of the probable diagnosis. It was found that the hole in the membranes through which the baby had passed was only two and a half inches from the lower edge of the placenta: furthermore, an area of two inches square of the lower placenta was of a darker color, had some small clots attached, and had the appearance of earlier disruption than the great part of the placenta above. The probable diagnosis therefore seemed to be confirmed, — that the bleeding came from the sinuses uncovered by the separation of a lap of the pla-

centa dipping into the lower segment, the separation taking place in the expansion of the lower segment as the os dilated. The mother made an uneventful convalescence.

Comment. — Suppose the bleeding had not ceased as it did in this case, and either mother or baby had begun to show signs from the maternal blood loss. Obviously there would have been a clear indication to complete the delivery with forceps or version, as the case might be. The writer has observed several private cases of this kind, and in each instance the bleeding has ceased with the descent of the head; but if it should not cease within reasonable time, the uterus must be emptied to control the blood loss.

As intimated elsewhere ante-partum bleeding may take place from low-seated placentae when the lower segment expands in the latter part of pregnancy. A young primigravida had a slight hæmorrhage in the night two days before the incidence of labor pains; but it had ceased on the writer's arrival, evidently from the descent of the head, and there was no bleeding during labor. Under pressure, thrombosis probably takes place and the opened sinuses are thus closed. Intra-partum bleeding from this source is always a cause of anxiety to the medical attendant, and his good judgment must guide him between the Scylla of undue blood loss and the Charybdis of unnecessary operative intervention.

CASE LXXXII

A physician's wife, who had already borne two children quite normally, reached full term of her third pregnancy, and awoke from sound sleep to find that she was in labor. She instantly aroused her husband, who telephoned the writer, engaged to attend the case, and who arrived in half an hour to find the baby already born, and the husband holding the uterus: the lady had had only two or three pains. The placenta followed very soon, and there was no hæmorrhage; the perineum was only slightly nicked: the baby weighed eight and one-fourth pounds; both mother and baby were discharged well.

Comment. — This simple case of so-called painless labor, terminating precipitately, has had its analogue in the experience of most obstetricians; and if such cases are attended by no disaster, the obstetrician rejoices that his detention is so brief, if indeed he reaches his patient before the baby is born. Another physician's wife took in her fourth full-term labor at 5 A.M. At the visit at 9.30 A.M. the os was found dilated to one and a half inches; the head presented O. D. P. As the husband was to stay on guard, the writer went home, and was to await a call when the feeble pains became more effective. Becoming impatient that no call came he visited again at 3.45 P.M., and was told by the nurse that the pains had apparently died away, and that the patient was sound asleep; he therefore again returned home. As he entered his house, came a telephone message to "come immediately". It transpired that the patient awoke at 4.15 P.M., had three quick, sharp pains, and a six-and-three-fourths-pound baby was born at 4.30 P.M., just as the writer entered the house: the nurse had difficulty in getting the patient from sofa to bed. There was no hæmorrhage, and everything went well. Between 9.30 A.M. and 4.15 P.M. pains had appeared to husband and nurse to be in abeyance, and the patient slept; still dilatation must have been going on all that time.

A lawyer's wife of twenty-seven, whose first labor was normal, first felt the pains of her second labor at 4 P.M.;

the membranes ruptured at 4.30 P.M. The position was O. D. P. There was full dilatation at 7.45 P.M., and the pains then became quick and strong, so that at 8.10 P.M. ether was given to retard them and diminish their intensity. The length of the second stage was forty minutes; but it would have been much shorter but for the ether, and for the fact that the fœtal cord was twice around the neck, and that the occiput was posterior. The occiput did not rotate to the arch until just before expulsion, after the shoulders were engaged, so that restitution carried the delivered occiput back to its original position, pointing to the posterior aspect of the right thigh or the right sacro-iliac articulation.

Precipitate labor does not always terminate as auspiciously as the above cases would indicate. Sometimes the fœtus is driven through the canal before the soft parts are sufficiently dilated, with serious laceration and hæmorrhage: a hospital case is recalled in which the head was forced through the os before it was fully dilated; the house surgeon was unable to control the bleeding, and the woman died before a member of the visiting staff could be brought to the case. Then other serious, although of course non-fatal, lacerations of soft parts may occur. When the uterus empties itself too quickly, as also when it is emptied by art too quickly, there is insufficient time for retraction, and there is always danger of hæmorrhage from the unclosed sinuses of the placental site. Finally, although the accident is rare, there is always a possibility of spontaneous acute inversion of the uterus, as is also sometimes observed in veterinary practice. When possible, therefore, precipitate labor should be controlled with anæsthesia, and the uterus carefully safeguarded after delivery. Of course labor may be relatively painless without being precipitate; a woman may advance far in her labor without waking from sleep, and precipitate delivery is apparent rather than actual. In labors of this type the only disadvantage is the unpreparedness of attendance: for the escape from pain we can only be grateful.

CASE LXXXIII

The young married daughter of a physician, of good general health, but of a peculiarly nervous temperament, passed comfortably through her first pregnancy, and took in labor at 9.30 P.M. The pains occurred at twenty-minute intervals, and continued until 3 A.M. At 9.30 A.M., it was found that the cervix was not taken up, and the external os admitted only the tip of the finger: practically thus far nothing had been accomplished. During the day there were random pains; at 3 P.M., they were harder and more regular; and at 4 P.M. it was found that the cervix was taken up, and the os dilated to one inch. The pelvis was normal, and the baby, in O. L. A. position, was not much above average size; but the pains were very ineffective. The vagina, however, was very small, and there was decided vaginismus, which made vaginal examination extremely difficult: the husband stated that coitus had always been hindered by the same cause. During the night the labor dragged, and the pains seemed very ineffectual; but at 1 A.M. the os was fully dilated. The second stage pains seemed unable to overcome the vaginismic muscles, in spite of obstetrical ether; but finally they relaxed and dilated, and an eight pound baby was delivered with low forceps after a second stage of three hours and forty minutes. The perineum was simply nicked, and was repaired with two catgut sutures.

Comment. — This labor, which lasted forty-three hours if intermissions of pains are included, was a trying one for both patient and doctor; every physician has had similar ones, and will continue to have such occasionally as long as civilization continues, and as long as hyperæsthetic and pathologically innervated women conceive. Long and trying as this case was, however, the young mother did well, nursed her baby, and subsequently bore other children. Opinions seem to differ as to the best management of these cases of delayed labor: some obstetricians would perform elective Cæsarean section on all young women who appear to be physiologically unfit; others early resort to surgical anæsthesia, manual dilatation, and forceps delivery, often with

disastrous results to the unsoftened and unexpanded soft parts. To a naturally conservative mind the following measures may seem reasonable: When the early first-stage pains are weak, irregular, and ineffective, a hot immersion bath followed with a long, hot vaginal douche and ten grains of Dover's powder, will induce a refreshing sleep, and rhythmic, effective pains, with normal interval, will ensue. If the membranes have ruptured prematurely, and if the dilatation lags from ineffective pains or cervical œdema, hydrostatic rubber bags are often of great service. When inertia supervenes near the end of the first stage or after full dilatation, surgical anæsthesia, manual completion of cervical expansion, and forceps are surely rational procedures. No arbitrary time limit can be fixed for intervention in the second stage; it may be three hours or half an hour, and the decision must be reached by a well-trained conservative judgment.

CASE LXXXIV

A tredecigravida of forty had extensive varicosity of the vulva and vagina as well of the legs, and bore her large family of children long before the time when any care was taken of pregnant women with a view to preparing them for their labors. So this woman was brought to bed with unreduced vulval varices, and in addition with what proved a greater difficulty, — an extreme subinvolution of the vaginal wall, this redundancy being made worse by large rectocele and cystocele. She took in labor at 3 A.M., and the first stage was over in three hours; but although the expulsive pains were good and the pelvis ample, the head, in O. L. A. position, would not descend: when pushed down by the well supplemented contractions, the head simply pushed the voluminous vaginal wall before it, until the canal was so far occluded that no further descent took place.

Treatment and Result. — After the second stage had lasted three hours the woman consented to have forceps used, the head being still high; but the high application of the blades proved extremely difficult, the redundant vaginal folds pouching into the fenestra of the forceps, and hindering a proper adjustment. The application finally made, it was found that traction simply bunched up the walls and there was no progress; there was no assistant and no nurse to help. So traction was made with the force of one arm; and the fingers of the other, after some twenty minutes, succeeded in working back the bladder, rectum, and vaginal walls by taxis. The baby weighed nine pounds, and was not asphyxiated.

Comment. — Of course in a hospital, or in a good private practice, difficulties of this kind are minimized by adequate assistance; but among the poor, the unassisted physician has to meet a decided difficulty. Sometimes in spite of care a vulvo-vaginal varix will rupture, and a considerable hæmorrhage will ensue. A young physician in a recent case had to deal with post-partum bleeding; he used uterine massage, application of ice, and finally packed the uterus, but the bleeding continued. The uterus seemed well contracted,

and he thought to examine the cervix, but found no bleeding tear: he was at a loss to account for the hæmorrhage. Finally the woman was nearly exsanguinated, and a consultant was called, who found the source of bleeding to be a ruptured varicosity just within the introitus: this was promptly controlled with a deep suture.

CASE LXXXV

A laborer's wife of twenty-eight entered the writer's clinic suffering with backache and disturbed menstruation. The catamenia came a few days more frequently than formerly, and lasted longer: she had not had pain with the periods until the preceding six or eight months; but now a dull, heavy pain began two or three days before the flow appeared, and continued during the first two days; after that the flow diminished somewhat, but continued to dribble along for four or five days longer. She had had three children, one normally, and two with instruments; the doctors had told her she was badly torn: at all events, ever since the last baby, now a year old, she hadn't felt right with her womb.

Diagnosis. — The uterus was found not well involuted, retroverted, and somewhat prolapsed: the cervix was torn bilaterally, the tear extending into the lateral fornices, and there was much scar tissue: the vagina was subinvoluted and redundant, the posterior wall and perineum badly torn. Otherwise the patient seemed in excellent condition.

Operation and Result. — After due preparation for extensive plastic operation, the patient was etherized. The uterus was explored with a curette: the endometrium was found thickened, and was removed with gentle curettage. The cervix was not hyperplastic; but it was so irregularly torn, and there was so much scar tissue, that it seemed impossible to restore its normal size and shape by trachelorrhaphy, so a modified Schroeder's amputation was done, and the lower half of the cervix thus removed: care was taken to leave a sufficiently large cervical canal to allow for some subsequent contraction. Colpoperineorrhaphy was then done, and with changed gloves and gown the abdomen opened. The uterus was found without adhesions, and the appendages showed no evidence of infection; so ventral suspension was performed, and the abdomen closed in the usual three layers with lapping of the fascia. The patient made a good convalescence, during which she menstruated quite normally. She was discharged with her uterus held in normal axis with the fundus in apposition with the anterior

abdominal wall, sufficient time not yet having elapsed for the weight of the uterus to draw out a suspensory ligament. The amputated cervix looked symmetrical, the os was pervious to a Peaslee sound, the vagina was snug to the finger, and the perineum was well restored.

Subsequent History. — Nothing more was heard of this patient until about two years later, when she sent for an externe house officer of the Boston Lying-in Hospital to attend her in labor. The breech was found presenting, S. L. A., the baby alive and above average size, the os admitting one finger. Unfortunately the membranes had already ruptured. The pains were regular and of apparently normal length and power. The case was watched, and was seen by the Out-Patient Visiting Physician on duty, who found the stump of the cervix to be rigid and cicatricial: he wisely thought it best for the patient to enter the hospital.

Consideration of Treatment. — When seen by the writer after her admission to hospital, the patient had been in labor fourteen hours: he made no vaginal examination; but accepting the statement of the out-patient physician that the cervix was still rigid and cicatricial, it was for the writer to decide how best the patient could be delivered. It was quite possible that the cervix could be dilated, under anæsthesia, either digitally or instrumentally; indeed, had the membranes not ruptured prematurely and had the head presented, it was quite possible that Nature's hydrostatic wedge would already have effected dilatation. Then a Voorhees bag might be used to replace the ruptured membranes. But there were two weighty objections to both these methods: the bag might prove successful, but it would take time, and the woman had already been fourteen hours in labor; and perhaps this method would not prove effective, and more time would be lost: digital and instrumental dilatation would undoubtedly expand the cervix; but, as in dilating a cervix the seat of a scirrhous new-growth, it would very probably cause considerable laceration and perhaps hæmorrhage from torn vessels. Besides, under the circumstances, dilatation and delivery through the pelvis would doubtless undo the careful and successful plastic work already done.

So the writer decided that it was best to deliver by Cæsarean section.

Operation and Result. — On opening the abdomen, the stretched and untorn suspensory ligament was found in no way to have contributed to the dystocia: the uterus had expanded normally. Care was taken not to interfere with this ligament, in the belief that it would involute with the uterus and serve again to hold the uterus in its normal axis. There were no adhesions about the uterus; so that after delivering the child and placenta, the uterus was eventrated, sponged clean of membranes and decidua, and closed in the usual manner. The baby weighed eight and five-eighths pounds, and was discharged well, with its mother, on the sixteenth day after her normal convalescence and established lactation.

Comment. — This happens to be the only case known to the writer in which delivery by hysterotomy has seemed necessary, or at least desirable, after a plastic operation on the cervix of his own doing, and it is chosen for this collection of cases on this account. It is not, however, the only case known to the writer in which abdominal delivery has been necessary or preferable for the reasons above stated. It is for the reason, expressed also elsewhere, that plastic operations on the cervix of women in childbearing age may result in a stenosis preventing conception, on the one hand, or in a cicatricial atresia causing dystocia, on the other hand, that the writer believes it wise to postpone such cervical plastics until the menopause, whenever symptoms and conditions will in good judgment permit. Of course when cervical repair is postponed, the case should be kept under observation; and occasional local treatment may be necessary to heal erosions and reduce congestions. Of course, also, even in young and parous women, one should not hesitate to repair a cervix, or amputate it, when in a condition to seem to invite a malignant process, and when by local treatment it cannot be kept in a healthy condition: here, as in most conditions in medicine, a wise judgment must decide on an intelligent and conservative course.

CASE LXXXVI

A married Swedish woman had her first labor in her home: it was prolonged, and was terminated by craniotomy. The following year she entered the Boston Lying-in Hospital well advanced in her second labor, and was seen by the writer: the head presented, O. D. P., and was still high; the baby's weight was estimated at not more than seven pounds; the pelvis was found to be moderately contracted, measuring: inter-christal, 27 cm.; inter-spinous, 25 cm.; external conjugate, 18 cm. What was thought to be a fibro-myoma, the size of a duck's egg, was felt high up at the brim on the posterior lower uterine segment. It was believed that this fibroid would, as often is the case, draw up, or could be pushed up, and would not cause obstruction; and it was further thought that a baby of not more than seven pounds ought to pass through the pelvis, so the labor was allowed to proceed. But good, even severe, second-stage pains failed to push the baby down, and an attempt was made with high forceps: safe traction with the forceps also failed; and the baby, weighing six pounds and fourteen ounces, was delivered by internal podalic version and manual extraction. It was thought at the time that the fibroid played no part in obstructing the delivery; but this opinion is open to doubt. The baby showed no sign of trauma; but it lived only an hour: the mother made a normal convalescence, and was discharged well, with the uterus fairly well involuted and the fibroid mass the size of a hen's egg. The woman was advised that in the event of another pregnancy she should enter the hospital for an elective Cæsarean section.

Two years later this patient re-entered, at full term, but not in labor. The baby presented the high head, O. L. A., and evidently was of more than average size. The cervix was pushed forward by the tumor, which was as large as a man's fist, and filled the posterior room of the pelvic cavity: the woman was in excellent general condition. Four days were taken for the patient's preparation.

Operation and Result. — The uterus was not eventrated, but was walled off with hot, moist gauze. After the delivery of baby and placenta, the uterus was drawn through the incision, and the mucosa sponged clean by sight. Inspection of the myoma showed it to be broadly sessile on the posterior lower segment: the question of myomectomy was considered, and the operation was rejected as unsafe, if not impossible; it was believed that the tumor could be removed only by removing the uterus also. It was decided not to do hysterectomy, for reasons which will be considered later; so the uterus and abdomen were closed. The mother convalesced without untoward incident; at discharge, on the nineteenth day, the uterus was well involuted; the myoma, as expected, had also involuted, and could barely be felt, high up on the posterior segment. The baby weighed at birth seven pounds and ten ounces; it was suckled by the mother, and was discharged in good condition. The mother was told that she could safely have subsequent children in the same way.

Comment. — It is probable that both the myoma and the moderate pelvic contraction combined to cause the dystocia in this woman. In her first labor the dystocia was overcome with craniotomy, outside the hospital. In the second labor, the writer evidently erred in judgment in thinking the baby could safely be delivered by the birth canal. The third delivery was satisfactorily concluded, and a larger baby born, by elective Cæsarean section, as above described.

When the abdomen was open, and every facility ready, why did not the operator perform hysterectomy, since removal of the tumor alone was thought unsafe, if not impossible? He had three reasons:

First, perhaps selfishly, he wanted the woman to have the supreme satisfaction of enjoying her first surviving baby, after losing two. Certainly total hysterectomy has a low mortality; but there is a mortality. And when the shock of hysterectomy is superadded to that of Cæsarean section, the prognosis is surely less good. Besides the uterus could be removed later, should symptoms so require.

Second, as the mother was only thirty-seven, she might

naturally be expected to have further use for her uterus. Something might happen to this only child; it is unwise to put all one's money into a single investment, or carry all one's eggs in one basket. The Hospital had successfully performed a large number of repeated sections, to the number of six babies in five sections in one case, and there was no reason why the woman in question should not have such a family as her age and her means permitted.

Third, except in so far as to contribute to the dystocia referable to the contracted pelvis, the myoma had never caused any symptoms, neither as to pain, menorrhagia, nor appreciable pressure; why, therefore, remove it? There would be time to cross a possible bridge when, and if, one came to it.

For these reasons this woman kept her uterus and her myoma.

Fibro-myomata by no means necessarily cause dystocia, even when low seated; they may be small in the beginning of pregnancy, and may not enlarge sufficiently to obstruct the pelvis. The following case will illustrate this:

A married lady of twenty-seven had the great disappointment of aborting her first pregnancy. She was suspected by her family physician of having an ectopic gestation, and a consultant was called. What was thought might be a tubal pregnancy was felt; and to confirm the presumed and consequent uterine enlargement, the attending physician and his consultant permitted themselves to pass a uterine sound: they discovered that the uterus was enlarged. The next day the writer was asked to meet these gentlemen in consultation; and in his opinion, what had been mistaken for an ectopic pregnancy was two small fibroid nodules in the supra vaginal cervix; by bimanual examination he found the uterus enlarged, and made the diagnosis of a three months' intra-uterine pregnancy. From this time the treatment was expectant, and expectancy resulted in a three months' abortion a few days thereafter.

A year or more later this lady and her husband sought advice for the reason that their physician had told them that there should not be another pregnancy unless the fibroid

nodules could be disposed of, for they might enlarge during pregnancy and obstruct labor. The lady had been under daily local treatment with applications and tampons since the convalescence from her unfortunate abortion; but no progress had been made in causing the small tumors to absorb: she was tired and out of patience with local treatment; time was passing, she felt perfectly well, had no menstrual disturbances, and the couple were ardently desirous of offspring; what should they do? Examination revealed the two fibroid nodules, unchanged since the abortion. The writer was constrained to say that he was unfamiliar with any form of local medication that would cause the absorption of the fibroids; further, that as they were causing no symptoms he saw no reason for removing them surgically, that they might not enlarge during pregnancy and cause dystocia; still further, that if they did enlarge enough to give trouble, she could be delivered safely by elective Cæsarean section: he saw no reason to advise against pregnancy, if the couple were willing to face the possible contingency of abdominal delivery.

Subsequent History. — In due time the lady again became pregnant: she was seen from time to time for pregnancy care, and for observation of the fibroids. At the end of pregnancy the cervical fibroids seemed not to have enlarged at all, but rather to have thinned and flattened out as the pregnancy advanced. In due time she took in labor, and delivered herself of a nine-and-a-half-pound baby in a labor of ten and one-third hours. There was no hæmorrhage, and the convalescence was throughout afebrile. The cervix, on her discharge, was found slightly torn, the fibroids unchanged, the uterus well involuted, the baby suckling and gaining weight. Nothing has since been heard of the fibroids.

That fibro-myomata by no means necessarily cause dystocia, insuperable to safe delivery from below, even when low seated, and even when they do enlarge and fill the pelvis, may be shown by the following case:

A coachman's wife took in her first labor, and was seen in consultation in her home by a junior on the Boston Lying-in

Hospital Staff; he found the pelvis filled with a fibroid mass which pushed the cervix upward beyond reach, and referred the case to the Hospital, where she was seen by the writer, then on duty. In the time that had elapsed before her entrance, the tumor, under the contractions of active labor, had partly drawn up out of the pelvis, and the os could just be reached high behind the symphysis. The case was observed with interest: during the next few hours, the mass entirely drew up as the os dilated, and a presenting breech was extracted with no unusual difficulty. During the convalescence this large tumor, which had completely filled the pelvis, involuted with the uterus, and on the patient's discharge could be felt bimanually to be no larger than a hen's egg.

In due time this woman became pregnant again, and placed herself under the writer's care for observation. Felt from time to time, the tumor seemed not to enlarge at all: at all events it never came to the pelvis, and the woman delivered herself at home, at full term. The case was never seen again; but was it impossible that the tumor, which was doubtless chiefly myoma rather than fibroma, had so far involuted with the uterus as to have been "cured by the pregnancy", much as such growths sometimes shrink and cease to trouble in the physiologic atrophic changes of later life?

CASE LXXXVII

A multigravida of forty-one enters the hospital on account of bleeding from the vagina, which began several weeks before, and has increased so that on admission she is oozing nearly all the time, almost to the extent of a menstrual flow. She has not lost weight, as far as she knows, and has had no pain; but she feels reduced in strength and general health, and worried about the bloody discharge, which she never had with her other pregnancies. She thinks she is in her ninth month, but can't remember the date of her last period.

Diagnosis. — Abdominal examination shows a pregnant uterus, evidently in the last month: the fœtus is alive, well developed, of above average size, and presents the head. The cervix is large, soft, reddened, lacerated, everted, ragged, friable, and bleeds on touch: no microscopic aid is needed to make the diagnosis of epithelioma. No other organic ailment is found, and aside from the deteriorated general health of a hard-working, multiparous wife, the general condition is good. Careful pelvic re-examination shows that the vagina is not invaded, no enlarged lymph nodes are felt, and the broad ligaments seem clear. Apparently there is a good prospect for a saving radical operation.

Consideration of Treatment. — Apparently the cancer is a quite recent development from a long standing tear of the cervix, under increased nutrition of pregnancy. There is no evidence of metastasis. Radical operation seems obviously indicated. The baby is of nearly full development, and could safely to itself be delivered now. Labor might be induced, and doubtless the woman would deliver herself; if not, forceps could be used. Were the cancerous growth of indurated, scirrhous type, it might prove a cause of decided dystocia, and of difficulty in dilatation. But it seems highly probable that the soft, friable cervix will tear deeply under the necessary dilatation, and that the mother will sustain a loss of blood which she can ill afford, especially in view of a subsequent hysterectomy. The abdomen has to be opened for a complete removal of a uterus of this size; therefore, the most rational treatment is obviously to prepare the patient,

remove the child by hysterotomy, and follow with total hysterectomy. Advice to this effect is given and accepted.

Operation and Result. — In accordance with the above plan, a seven-pound baby was delivered by hysterotomy, and subsequently a panhysterectomy was done: the vaginal vault was left partly open for drainage. Everything went smoothly in the convalescence. The baby throve; and as it seemed best that he should not be suckled by his mother, he was sent home when three weeks old. The mother was kept longer than usual, to restore her strength, and convalesced very satisfactorily from her operation; but about a month thereafter she was found to have an erysipelatous lesion on the buttocks, and she died of general streptococcæmia.

Comment. — The disappointing maternal result in this case in no way invalidates the present teaching as to the treatment of carcinoma of the cervix complicated with pregnancy. If the malignancy is discovered early in pregnancy, or any time before fœtal viability, and if radical operation gives reasonable assurance of success, the pregnancy should be interrupted and hysterectomy performed in the expectation of saving the relatively more valuable life. The Roman Catholic Church does not accept this view, and patients of that communion are free to act in accordance with their religious teaching. Of course, if cervical cancer, discovered in early pregnancy, is too far advanced for radical operation, the case is conducted wholly in the interest of the fœtus, which may usually be delivered at full term without regard to the maternal result. Happily, when cancer is found, as in the case above given, still operable after viability, there is no conflict of opinion. And then, delivery by hysterotomy, followed by hysterectomy, will save the fœtus and give reasonable expectation of saving the mother as well.

CASE LXXXVIII

A cultivated young wife who had lost her first conception by early abortion, became pregnant a month later and was approaching term when she had the misfortune to suffer spontaneous rupture of the membranes one month before labor was due. Uterine contractions supervened three hours later, and the local physician was unable to stay the progress of labor. She was seen by the writer at 5.30 A.M.; the cervix was taken up, and the os dilated one inch; the head was presenting O. D. P., and had not engaged. The patient was watched for the next six hours: although in excellent physical condition, she had a nervous organization that didn't bear pain well, and she made a good deal of fuss. Ether was given in reasonable amount, not enough to arrest the labor, and meanwhile the os had dilated to two inches and the head had descended into the pelvis. Gradually the young woman became almost maniacal, in spite of obstetrical ether, and twice threw herself from the bed to the floor; so it was decided to etherize fully and deliver.

Treatment and Result. — The os was found three-fourths dilated, and the dilatation was completed manually. When she was a girl she had fallen and broken her coccyx, and the sacro-coccygeal joint had anchylosed with the tip of the coccyx well forward, thus definitely contracting the conjugate of the outlet; otherwise the pelvis was normal. The short, straight forceps was then applied; and the occiput was rotated to the arch and the head delivered without re-application of the instrument. The extraction was difficult on account of the bent forward and anchylosed coccyx, which left a pressure mark on the baby's brow, but was not again broken: the baby was not asphyxiated, and weighed six and a half pounds. The mother made an excellent convalescence, and was able to nurse her eight-months' baby, which gained three pounds in its first five weeks.

Comment. — In many cases forward rotation of the posterior occiput can be effected gradually, by suitable posture, or by the use of the fingers during the pains: with the patient fully anæsthetized for delivery, the whole hand can often

be introduced into the pelvis and the head rotated, when the usual forceps with pelvic curve is generally applied. Sometimes, however, the coaptation is so snug that the hand cannot well be introduced, and in such cases the straight forceps, without pelvic curve, finds its clear indication, for it can be applied over the parietal bosses, rotation favored with traction, and the head extracted without the re-application necessary in forceps with pelvic curve. Of course the technique of Scanzoni may be followed with curved forceps; but this involves a double application, and may cause much vaginal trauma in unskilful hands.

In the case above given the patient was fortunate in having no coccygodynia. It not infrequently happens in fracture-dislocations of the coccyx that the sacro-coccygeal nerve is so far involved in the callus of repair that great pain results, and can be relieved only by coccygectomy.

CASE LXXXIX

A single woman of twenty-one, a waitress by occupation, and a primigravida, applied for care at the Boston Lying-in Hospital at the beginning of the ninth month. She had a justo-minor pelvis, with an estimated obstetrical conjugate of 8 cm. The baby seemed of average size, presented O. L. A., and the head was not engaged up to the advent of labor. It was regarded as a border-line case, one which might or might not terminate, or safely be terminated, by the pelvic route; so it was decided to give the woman the test of labor, and govern the treatment by this experience.

Conduct of the Case. — When the young woman entered the hospital at full term, she had been having pains for forty-eight hours. To be sure the pains had not been hard or effective; for but little progress in dilatation had been made, and the head had not descended. There is always a fair presumption of relative disproportion when the primiparous head has not at least engaged in the last week or ten days of pregnancy; and in the present case, it seemed improbable to the writer that the head would mould and descend, if further time were given: so section was decided on, and performed as soon as the patient could be prepared. It was well that this decision was made; for on opening the uterus the liquor amnii was found to be meconium-stained, and the baby, which weighed six pounds and ten ounces, was so far asphyxiated that it was resuscitated with difficulty. The mother made a good convalescence, and went home on the eighteenth day, the baby then weighing seven pounds and four ounces, and doing well on the breast.

Comment. — It is a favorite procedure with some clinicians, in the border-line cases, to test the relative capacity of the pelvic brim by endeavoring to force the head into the pelvis by bimanual taxis. This method works very well in some cases; but it is generally painful, and its satisfactory performance often requires anæsthesia. If the head can thus be made to pass the brim, well and good; but if it cannot, it is not proved that the head will not pass under the moulding of early labor. To the writer it therefore seems a fairer test,

in the border-line cases, to let the patient have a reasonable time, under observation, to show whether or not the head will mould into the pelvis. During this test vaginal examinations should be avoided, and results be judged by external palpation. The fœtal condition should also be watched, and the obstetrician should be in readiness to proceed to section with timeliness, if the test in a reasonable time does not indicate by gradual progress that safe delivery is likely to ensue.

CASE XC

A young Italian woman entered the hospital in labor with her fifth child, and the following history was ascertained:

First Labor, — six years before. The breech presented, and after sixteen hours without material progress her physician completed the dilatation, and with difficulty extracted a female baby weighing eight pounds; the baby's heart was beating, but respiration could not be established: the mother made a good convalescence.

Second Labor, — at full term, one year later. Again the breech presented, and again, after twenty-three hours of ineffectual labor, manual extraction was performed. The male baby weighed seven pounds and fourteen ounces, and was born alive; but it died before it was a month old, apparently of mal-nutrition: again the mother made a good convalescence.

Third Labor, — at full term, two years later. This time the baby was born spontaneously, and alive; but it weighed only six and a half pounds.

Fourth Labor, — at full term, a year later. The labor was terminated by some operative procedure, the nature of which the woman could not tell; but the baby was stillborn, and weighed eight pounds.

This healthy young woman, then, had only one baby to show for her four full-term labors. As far as could be learned no one had ever measured the pelvis, or made any antepartum study of the case. She had now been in labor three hours with her fifth child.

Diagnosis. — Palpation revealed a large baby presenting the breech. The pelvis was of the justo-minor type, with an external conjugate of 18.5 cm. The pubic arch was narrow, the ischial spines prominent, and the span of the tuberosities 8 cm. The sacral promontory was easily reached, and measured 9.5 cm. The true conjugate was estimated to be not more than 8 cm., or slightly over three inches, and this with a narrowed transverse. From a comparison of the baby's estimated size with the pelvic measurements it seemed clear that the living baby could not be expected safely to

pass the contracted pelvis; and the history obviously confirmed this opinion: Cæsarean section was therefore clearly indicated by the relative disproportion between passage and passenger. The vagina had been invaded by only one examination, at the time of pelvimetry, and the prognosis was not therefore shadowed by any reasonable probability of infection.

Operation and Result. — The classical section was performed, without eventration of the undelivered uterus. A female baby weighing nine pounds was safely delivered, a normal convalescence followed, and mother and baby were discharged well on the fifteenth day.

Subsequent History. — A year and eight months later this woman became pregnant again, and had the good sense to follow the advice given her on her discharge, namely, to place herself under the care of the hospital during her pregnancy. She was thus brought to full term in good condition: her pelvic capacity was known, and the fœtal development was watched. When, therefore, she entered for her sixth delivery, after two hours of labor, it was known that the head presented, O. L. A., and that the baby was large, too large to pass, and section was therefore performed as soon as the patient could be prepared. Incision was made at the edge of the former one, with a view to the excision of the old scar: no intra-abdominal adhesions were found. The baby weighed eight and three-fourths pounds, and with its mother was discharged, well, on the eighteenth day.

Comment. — Naturally there are differences of opinion on various points of technique in the performance of abdominal hysterotomy, and these differences may well be left to individual experience: ultimate results are what all surgeons must be judged by. In the matter of eventration of the undelivered uterus before incision, the writer believes, with many others, in the superior advantage of the short abdominal incision, which is impossible if the undiminished uterine tumor is eventrated: and in repeated sections there are sometimes numerous adhesions which must be tied off before the uterus can be lifted from the abdominal cavity. If warm, moist gauze is walled around the uterine surface to be opened,

it is entirely possible to protect the peritoneal cavity from the invasion of blood or amniotic fluid, a much shorter abdominal incision is thus needed, and the shock of operation is much diminished. After the delivery of the baby, it is generally not difficult, even in the presence of some adhesions in repeated sections, to lift the uterus through the incision, the better to apply the uterine sutures, and especially to permit a careful inspection and cleansing of the uterine cavity. To facilitate the latter point of technique, the writer has been accustomed successively to invert each cornu through the uterine incision, and thus easily to sponge and inspect the mucosa, and leave it clean of membranes and decidual shreds.

Opinion has differed as to the necessity of dilating the cervical canal in elective hysterotomies performed before the advent of labor. Formerly it was always customary to dilate the canal from above, and sometimes to pass a strip of gauze to insure drainage. Experience has seemed to show, however, that even when previously undilated the cervix will generally relax and dilate sufficiently after abdominal delivery to provide for adequate lochial drainage. That this is not always the case was shown in the convalescence of the patient above referred to, after her second section, performed when she had been only two hours in labor: in the first week of this convalescence the woman was running a temperature of 100° F., and the lochial discharge was scanty and slightly foul; the cervix was then freely dilated from below, the patient placed in Fowler's position with the uterus capped with ice, with the immediate establishment of better drainage and normal temperature.

Case XCI

A Virginian negress, twenty years of age, and a primigravida, applied for hospital care early in her pregnancy, and it was thus possible to study her pelvis and the gradual development of the baby. The pelvis was found to be of the generally contracted, flat, rachitic type, with an estimated obstetric conjugate at the brim of 8 cm. Believing that the case would probably come to abdominal section, and fearing to trust the young woman to enter hospital at the beginning of labor, the writer had her admitted on March 24, when she was supposedly near full term: at the time, the head in O. D. P. position was freely movable at the brim, and the baby was evidently well above the average size.

Conduct of the Case. — Experience has taught that in the labor of the Southern negress, if the pains are good, the fœtal head will generally mould through a relatively much smaller pelvis than in the white races. When, therefore, this young woman took in labor, nine days after admission, it was determined to give her the test of labor for a reasonable time, under close observation, and without vaginal examinations; but after ten hours of good pains, the head had failed to engage, and abdominal hysterotomy was then carried out. The baby weighed nine pounds: it was interesting to observe that the baby's head was much moulded by the ten hours' pressure against the brim in attempted descent; but it did well, and was discharged on the twentieth day with its mother, who had made a good convalescence, save for some irregular pyrexia associated with the establishment of lactation.

CASE XCII

A Russian peasant woman of twenty-five was referred to the House from the Pregnancy Clinic of the Boston Lying-in Hospital. She had had two normal deliveries at term; but both babies succumbed in a few hours. Syphilis was suspected; but the Wassermann test was reported negative. Nothing could be ascertained in regard to the two previous pregnancies, or the weight of the babies.

Diagnosis. — External pelvimetry gave the inter-christal diameter 25 cm., the inter-spinous 20 cm., and the external conjugate 17 cm., — evidently a justo-minor pelvis. The span of the ischial tuberosities was 8 cm., and the obstetric conjugate was computed to be also 8 cm., — a little over three inches. It seemed obvious that a living baby of average size could hardly be expected safely to pass this pelvis, and an elective Cæsarean section was advised, at term.

Treatment and Result. — The young woman accepted the advice, and entered at full term, but not in labor. The baby was thought, by palpation, to be of average size. After the usual preparation of bowels, kidneys, and operative field, hysterotomy was performed, the abdominal incision being half above and half below the umbilicus. The baby weighed seven pounds, and was discharged, well, with her mother, after a normal convalescence of three weeks.

Comment. — There is some difference of opinion as to the preferable site of the abdominal incision. Until within recent years the incision was customarily made wholly below the umbilicus, or nearly so; but many obstetricians now believe that a high incision, above the umbilicus, is preferable. The advantages claimed for the high incision are two: that there is less likelihood of hernia, and less likelihood of post-operative adhesions. There is doubtless some truth in the first claim; still, the writer has seen no post-operative hernia in his cases since the mass suture was given up some years ago, and the abdomen closed in layers. As to the second claimed advantage of the high incision, there is probably a greater chance of post-operative adhesions when the uterine incision lies under the abdominal; but here it should be said

that if operators would give up their ambition to make time-records, and take ten minutes more, perhaps, to make painstaking sero-serous uterine suture, and carefully to close the parietal peritoneum, troublesome adhesions would seldom occur. On the other hand, also, there are advantages in the low incision: the diminished uterus, after the delivery of the baby, does not have to be held up while the uterine sutures are placed; and if it should be necessary to control the blood supply through the broad ligaments, the latter are more accessible. Moreover, with the low incision it is much easier to inspect the pelvis and lower abdomen. On the whole the choice of incision may well be left to individual experience; but an incision half above and half below the umbilicus has been found by the writer preferable to either the high or low incision.

It cannot be impressed too forcibly on the mind of the young obstetrician that the necessary indication for Cæsarean section does not rest on the measurements of the bony pelvis alone: the depth of the pelvis, the presence of fat, and undue muscular development may proclude the safe fœtal passage, on the one hand; and on the other, a thin, wiry, vigorous woman may safely deliver herself, or be delivered, through a considerably diminished bony pelvis. Moreover, it must always be remembered that there are three factors concerned, — not the pelvic capacity alone, but the size of the baby and the strength of the uterine and abdominal muscular contractions. Two hospital cases come to mind, in each of which three sections had been performed, some of them by the writer. Both of these women entered hospital in fourth labors, and speedily and safely delivered themselves, with somewhat smaller babies, but also with more effective pains.

A young primigravida, born in Athens, was under pregnancy observation, with a pelvis only moderately contracted; but she was short and fat, the pelvis was deep and of the male type, and her baby was thought to be well above the average size: the true conjugate was estimated to be 3.6 inches. She had twenty hours of ineffective labor, and then was safely delivered by hysterotomy of a baby weighing

eight pounds and eleven ounces; with a smaller baby she is now awaiting her second labor: many a woman with a bony pelvis no larger, but thin and strong, has been safely delivered, perhaps with forceps. A Massachusetts born woman of twenty-four came under observation in her third pregnancy: she had been delivered twice by Cæsarean section, by different obstetricians, the second baby weighing eight pounds; her obstetric conjugate was estimated to be not more than 8 cm. The baby was evidently small, and it was thought by the writer that it ought, with good pains, to pass the contracted brim. Unfortunately the membranes ruptured prematurely, and the cervix was slow in dilatation; but the head engaged and entered the pelvis, and the writer finally delivered with forceps because he was unwilling to let the woman strain, with her sutured uterus: the baby weighed five and a quarter pounds, and after the normal maternal convalescence was discharged with a gain in weight of eight ounces. An Italian woman, with a slightly larger pelvis, had had two normal labors, followed with a Cæsarean delivery on account of a larger baby, all three deliveries in other hands. In this fourth pregnancy it was found that the baby was small, and it was thought that with reasonable *vis a tergo* it ought safely to pass the birth canal. The woman entered hospital in active labor, and easily delivered herself of a baby weighing just under six pounds, which was discharged, well, with its mother, on the fourteenth day.

The writer is well aware of the opinion of some obstetricians that a sutured uterus cannot with safety be allowed to undergo the strain of labor, that "once a Cæsarean, always a Cæsarean". Observation and experience have prevented the writer from accepting this opinion. A well-sutured uterus should be as strong as ever, and in the writer's experience has proved to be so. Notwithstanding, he would not permit a woman with sutured uterus, whether from hysterotomy or after uterine rupture, long to suffer second stage pains: the first stage makes no serious strain on the musculature of the repaired uterus, and skilled observation may safely be trusted to limit the tax on the possibly weakened uterine wall in the second stage, with either assisting *vis a fronte* or with hysterotomy, as good judgment may dictate.

CASE XCIII

A young married lady living in the country had the great misfortune to have unskilful attendance in her first labor, which was terminated with craniotomy: fortunately, however, she was not infected. In her second pregnancy, three years later, the family physician was changed, and the writer was asked to act as consultant; he therefore saw the lady from time to time during pregnancy. She maintained her usual, excellent health, had no toxæmic symptoms, led a rational out-of-door life, and altogether was a fine specimen of able-bodied young womanhood. Careful pelvimetry showed a slight, general contraction, of the type so common in thorough-bred, American women of her generation; in all other respects she had a very normal development. Seen at the end of seven months, she was found to have a breech presentation; but a month later, the head was found presenting, by external palpation and auscultation: the young mother thought she had noticed when the change took place. In due time she took in full-term labor, and was seen by the writer after she had been in the second stage for an hour under the care of her able and experienced family physician. After observing the labor for half an hour it was obvious to attending and consulting physician that the *vis a tergo* was inadequate. The head, presenting O. L. A., was midway down the pelvis; but progress was not made by the well-used contractions, and it seemed that there was a clear indication for the application of requisite *vis a fronte*.

Operation and Result. — The axis-traction forceps might well have been employed; but by preference the common forceps of Braun was applied, and the principles of axis traction made use of in the technique. Care was taken not to use undue compression, the handles were relaxed after each traction, that the compression should not be continuous, the tractions were made with the pains, and were not too long. A nine-pound girl was duly delivered without visible forceps marks, and there were no subsequent symptoms of intra-cranial hæmorrhage. The mother made an uneventful

convalescence, nursed her thriving baby, and both were discharged well.

Subsequent History. — Seven years later this young matron became pregnant again, and was attended by the same physician and consultant. This time again the breech presented, and did not as before change to head. As the pregnancy advanced past the eighth month it was obvious that the baby was reaching unusual development: the abdominal tumor became so large and broad that twin pregnancy was suspected, but not confirmed. In due time full-term labor began, and the same consultant saw the lady after some hours of first-stage pains. The os became fully dilated, and the membranes were ruptured in the hope that the breech, S. L. A., would mould and descend; but after nearly two hours of good pains, it failed to do so, and it seemed best to family physician and consultant to deliver by manual extraction.

Operation and Result. — Exploring with the hand and drawing down the anterior leg, it was obvious that there were no twins, but that one had to deal with a single, very large baby. It was also clear that the physical effort of timely extraction would probably be too great for one able-bodied man, and therefore both physicians were gowned, gloved, and ready. The consultant drew down the leg until with a hot, moist, sterile towel he could grasp the thigh, on which traction was then made, to avoid injury to the ligaments of the knee-joint: as in forceps delivery, tractions were intermittent and made coincidently with the pains. As soon as the posterior groin could be reached the fingers of one hand were hooked thereover, and with the other hand grasping the descended thigh the combined traction brought down the buttocks, and enabled the operator to deliver the other lower extremity: all the while the clean assistant was exerting intelligent supra-pubic pressure, through a sterile towel, coincidently with the tractions from below, thus increasing the *vis a tergo*, and endeavoring to prevent the extension of arms and head, which is otherwise quite sure to occur. Enveloping the parts thus far born with a fresh hot towel, to prevent chilling and possible premature attempts at

respiration, the operator grasped the fœtal pelvis, with a thumb on each buttock, and assisted by supra-pubic pressure delivered the trunk as far as the lower angles of the scapulae. It was then time to draw down the arms and sweep them over the fœtal chest, preliminary to delivering the shoulders and the aftercoming head; but the operator found his hands and arms so fatigued and powerless that it was clear that he would be unable to deliver within safe limit of time: he therefore asked the assisting physician to change places with him; and as he was clean and ready, there was no loss of time.

The skilful family physician found great difficulty in freeing the arms, owing to the fact that the trunk of the large baby so filled the pelvis that it was almost impossible to introduce his hand sufficiently high. Without undue delay he succeeded, however, in carrying his fingers over the posterior shoulder, in reaching the bend of the elbow, thus drawing down the humerus and sweeping the lower arm across the chest and down. This arm secured, the other was brought down with less difficulty, and the final struggle with the head alone remained. But by this time the hands of this assisting doctor were too fatigued for effective effort, and he failed in his skilful attempt to apply forceps to the aftercoming head. He therefore resumed his place for supra-pubic pressure, while the now rested consultant undertook the extraction of the head. With the body of the baby, rewrapped in a hot towel, resting *back up* on his left arm, he was able to reach the canine fossæ with the left fingers: the fingers of the right hand were then so applied to the shoulders, two on each side of the neck, that aided by powerful pressure from above he was enabled to exert sufficient traction to draw the head into the pelvis, whence it was then manually delivered as a face, by flexion. The baby was in livid asphyxia, but was soon resuscitated by the family physician: its subsequently verified weight, naked, was twelve pounds and thirteen and a half ounces. There was no hæmorrhage or undue maternal trauma, and after an uneventful convalescence the mother and baby were discharged well.

Comment. — The presentation of the breech is not an abnormal one, for it has a normal mechanism of delivery,

and in the absence of relative disproportion is often born spontaneously, while the obstetrician has only to avoid unnecessary and injudicious traction, free the legs and arms as they appear at the outlet, secure anterior rotation of the occiput by turning the baby's back uppermost *after the shoulders are born*, and perhaps aiding the birth of the head, as a face, by flexion. But while not abnormal, it may truly be said that presentation of the breech is highly undesirable, and often gives rise to dystocia. Moreover, the birth mortality of breech babies is very much higher than that of those born head first, the percentage of course varying with the skill and judgment of the obstetrician and his success in procuring skilled assistance. The reasons for this higher fœtal mortality are well known to medical students. But it should be realized that the fœtal mortality may be much reduced, if certain definite principles are acted upon in those cases in which extraction is clearly indicated. Some of these principles have been mentioned in the foregoing description. Some will bear emphatic repetition:

No obstetrician, however skilful, should undertake to deliver a breech alone, unless the baby is known to be very small, perhaps immature, and unless the mother is a multipara. There is no time to secure an assistant during an extraction; he must be at hand, ready for immediate service, if needed. When the baby is known to be of more than average size, or when there is a known disproportion between passage and passenger, and when it is foreseen, as it should be, that the extraction is likely to be a difficult one, the able assistant should be surgically clean, gowned and gloved, and ready: there is no time for an assistant to prepare himself after it is found that he is needed. In the case above recounted neither the family physician nor his consultant could have delivered the baby alive: its life was saved by the readiness of two men. Even if the assistant is not needed to take part in the extraction, he is always needed to control the uterus from above, and give needed pressure when directed.

Skill is needed in the timely withdrawal downward of the arms: they are often extended above the head, sometimes

in spite of skilled pressure from above. Many operators defer the withdrawal of the perhaps extended arms too long; they draw the baby too low, and wedge the arms into the pelvic brim, making subsequent extraction difficult. Whether extended or not, the arms, or at least one arm, should be drawn down before the shoulders are in the brim, and it is a good point in technique to put a sling of gauze or tape about the wrist to prevent later re-extension.

Some operators make the mistake of operating too quickly, in their zealous thought of the fatal ten minutes; they do not leave enough for the uterus to do, aided by the skilful abdominal manipulation of the assistant, and in their overzeal they "turn their umbrella wrong side out", — extend the head and arms. After the withdrawal of the arms, a skilful assistant, knowing the position of the baby, can flex the head, or keep it flexed, and make it possible for the operator to reach the canine fossæ, in which he may get a good *point d'appui* to enable him to draw down the sinciput and assist in the normal birth by flexion.

No operator acquainted with normal breech mechanism would forget that Nature does not always safely lead, but that She sometimes needs assistance: he would know that unaided Nature may suffer the baby, after birth of the shoulders, to rotate the back and occiput posteriorly, and therefore he would see to it that normal anterior rotation took place.

The change in presentation noted in the above case is not so unusual as would be supposed by those who do not palpate their pregnant patients from month to month. In multigravidae, and in primigravidae with pelvic contraction, changes in position and presentation not infrequently occur, owing to the fact that in the former case relaxed uterine and abdominal walls, and in the latter case the pelvic deformity, sometimes prevent the nestling of the head into the girdle of contact at the brim, in a way to maintain a head presentation and an unchanged position: hydramnios often acts to the same end, in that the fœtus, usually smaller than normal, is more movable in the undue amount of amniotic fluid. Thus breeches may change to heads, and *vice versa;* and posterior occiputs may change to anterior positions. These

changes of position and presentation rarely take place, except in hydramnios, after the eighth month, because of lack of room.

If it is known that in a given case there is a breech, or indeed any abnormal or undesirable, presentation or position, ought the responsible obstetrician to report the fact to the patient or to her husband? Surely not to the patient; she should not have her mind disturbed and apprehension excited by any such untoward information. What would be the object in telling the husband, unless the condition is one pointing to perhaps a Cæsarean section, and necessary removal to a hospital? Of course he would have a right to know; but would it be right and kind to tell him, unasked, under ordinary circumstances, that there may be trouble in the delivery? Some physicians might think they ought to tell, to prepare the husband's mind for possible disaster, and selfishly to protect themselves against possible adverse criticism. But would they themselves like to have the captain of their ocean steamer tell them of barometric changes that foreboded a possible storm? Would they not prefer to have their minds left undisturbed until it was obvious that trouble had really occurred, and they were ordered to be ready in life-preservers to take to the boats? He who steals one's purse may indeed steal trash; but he who steals one's peace of mind, unnecessarily, commits an exceeding theft.

A brilliant young internist placed his primigravid wife in the care of the writer, who discovered in the seventh month a breech presentation: there was no subsequent change of presentation; but the writer kept this knowledge in his heart. About two weeks before the expected labor, the young doctor made a before-breakfast, excited call to say that he had discovered in his wife a breech presentation, and that he thought the writer ought to know it. He was told that the fact had been known for six weeks, and it was hoped that he would be grateful for six weeks' peace of mind: he knew the fœtal prognosis in primiparous breech delivery. It might be added that two weeks later with an able assistant the writer safely delivered the primiparous nine-pound

breech baby, with no other casualty than a purposely broken humerus, which like most green-stick fractures united perfectly under distinguished surgical care. All was well; but the young doctor had had two weeks of unnecessary apprehension.

CASE XCIV

An intelligent housewife at full term in her third pregnancy, but not in labor, entered hospital because the fœtal membranes had ruptured. As both former children had been born in hospital, the following history was easily obtainable: —

First labor: at age of 32; the head presented, O. L. A.; the first stage lasted over thirty hours, but after a second stage of less than an hour and a half she delivered herself of a nine-pound living child; from these facts it may be inferred that the pelvis was ample.

Second labor: at age of 36; the head presented, high, in O. D. P. position, and not engaged. Pains began at 4 A.M., but, as often is the case in posterior positions, were not very effective; the membranes ruptured at 3.30 P.M., when the os was about two-thirds dilated. Soon after, the os became somewhat œdematous, and the fœtal heart rose from 140 to 170; the head was still in O. D. P. position and not engaged: it seemed to the attending physician that it was best to deliver. The axis-traction forceps was applied, but slipped when tractions were made; after three unsuccessful applications the forceps was discarded, and delivery was effected by internal podalic version with forceps to the after-coming head: the stillborn fœtus weighed eight pounds and three ounces, thirteen ounces less than the first child, which was born naturally from O. L. A. position.

Comment. — An impersonal adverse criticism should be made here of the use of forceps in this case, for the delivery of a high floating head in posterior position. All high forceps work is difficult, and is liable to result in serious fœtal injury, especially when the position is posterior. If the head is well moulded into the pelvic brim, the forceps may legitimately be used to draw it into the cavity: otherwise the fœtus should be rotated bimanually into O. D. A. position, when it will, or may be made to, settle into the pelvis, and forceps may more easily and safely be used on the anterior occiput; failing this manœuvre of long axial anterior rotation, internal podalic version would next be considered, and

performed in the absence of contra-indication from the condition of the uterus.

Third labor: at age of 40; membranes ruptured at 6 A.M.; labor had not begun. Pelvimetry showed the pelvis to be normal; a good sized fœtus presented, O. D. P., not engaged.

Treatment. — With a view to effecting anterior rotation of the fœtus on its long axis the patient was directed to assume a kneeling posture by the bedside, making herself comfortable with pillows beneath her knees, and leaning forward, resting her head and arms upon the bed: she maintained this posture from time to time during a good part of the day. Meanwhile labor did not supervene.

Result. — At the clinic on the following day the writer was able to demonstrate that the fœtus had rotated anteriorly and occupied an O. D. A. position. Labor began the next day; the first stage lasted three and one-half hours, and the woman delivered herself in a second stage of seven minutes. The baby weighed ten pounds, one pound more than the first child, and one pound and thirteen ounces more than the second baby, which was lost in operative delivery from a high posterior position.

Comment. — The theory on which gravity effects anterior rotation is sufficiently simple. The position of the spinal column makes the dorsal side of the fœtus the heavier; and when the patient's posture is such as to make the anterior uterine wall the lower, the natural tendency, under the laws of gravitation, is for the fœtus to rotate on its long axis to enable the dorsum to seek the most dependent portion of the uterus. The ease with which this anterior rotation will occur depends very largely, of course, upon the mobility of the fœtus. If the fœtal head is not engaged, and if the membranes are unruptured, anterior rotation will almost invariably take place. That unruptured membranes are not essential to this rotation is shown by the third labor in the case above described. If the head is fully engaged, rotation cannot, of course, occur; that is, the head cannot rotate in the brim. But if the head is simply resting upon the girdle of contact, like an egg in an egg-cup, embedded, so to speak, in soft parts merely, a knee-chest or a knee-elbow position

will make the fundus the lowest part of the uterus, and the fœtal head will drop away from its bed, under gravity, unless a long-dry and retracted uterus is holding the fœtus immovable. Then, after the head is dis-embedded, a kneeling posture will promote the anterior axial rotation. Numerous cases could be cited to show the value of posture in the treatment of high occipito-posterior positions, cases in which by primeval instinct parturient women assumed the kneeling posture to the great furtherance of safe delivery. Let one such case suffice: A young, short, and stout primigravida took in labor at 7 A.M.; at 11.30 A.M. the head was at the brim in O. D. P. position, the cervix was taken up, the os dilated something over an inch; returning from luncheon at 12.30 P.M., the writer found the woman on her hands and knees by the bedside, a position assumed by her own instinct; examination then revealed that dilatation was complete, that the membranes had ruptured, and that the flexed head had descended and rotated to the arch: the baby was born normally at 1.45 P.M., six and three-fourths hours from the initial pains.

CASE XCV

A talented young primigravida of twenty-six passed through her pregnancy without a single untoward symptom. The pelvis had normal measurements, and the baby presented the head, O. D. P. It was hoped that the head would descend into the cavity during the last two weeks of pregnancy; but it did not, and she took in full-term labor with the head lightly engaged, and still high. She had a rather long first stage for a healthy and strong young woman, twenty-three hours; but she bore it well, and meanwhile the head flexed and descended into the pelvis. The second-stage pains were fairly good, and the head was brought to the pelvic floor; but the occiput did not rotate to the arch. The head was well flexed; and of course the pelvic floor of a healthy young woman, with its normal tension and elasticity, ought to rotate the leading point, the occiput, in the well-flexed head, provided the pains are sufficiently strong to furnish the increased power necessary to traverse the longer arc of 135°. But the well-coached and well-used pains were not sufficiently strong, and the attempt was made to assist the rotation with two fingers, finding their *point d'appui* on the anterior lambda suture: oftentimes the additional force thus exerted during pains will gradually help rotation, the fingers each time holding what is gained, until finally the occiput reaches the right (or left) anterior quadrant, and thus the O. D. P or O. L. P. is converted into an O. D. A. or an O. L. A., from which positions the head may be delivered by nature or art. But the introitus was small, rigid, and hyperæsthetic, and nothing could be accomplished in the way of promoting rotation: so, after a second stage of three hours, rather long, but very well borne, it was decided to etherize and deliver by art.

Operation. — It is a pity to deliver the head with forceps with the occiput remaining posterior, because there is necessarily a much greater injury of the soft parts, when the head is extended out: therefore, after dilating the rather unyielding introitus, the most natural expedient was resorted to, to effect anterior rotation, — the use of the hand. With the

patient in dorsal forceps position, the left hand was introduced into the pelvic cavity, the head grasped, and then turned manually to an O. D. A. position, the body being rotated meanwhile by abdominal taxis with the right hand. The forceps was then applied, traction made with pains, favoring with a facile wrist the rotation of occiput to arch, and the head extended out. The mother's pulse after delivery was 88, and after the third stage 56: there was no hæmorrhage; but four stitches were needed to repair the perineum. The baby weighed eight and seven-eighths pounds, and with its mother, after her afebrile convalescence, was discharged well. The usual examination of the mother, after eight weeks, showed: cervix not torn; uterus well involuted and in normal position; vagina snug; perineum normal.

Comment. — The posterior occiput will almost invariably rotate to the pubic arch, if three conditions are satisfied, these conditions being,

(*a*) Complete flexion of the head.
(*b*) An untorn, elastic pelvic floor.
(*c*) Sufficiently strong pains.

Flexion of the head is often lost in the pelvis, and the brow may be found presenting; indeed, if not too large, the head may have entered the pelvis extended. Flexion can almost always be restored by digital resistance or active pressure on the sinciput during pains: this failing, manual manipulation is usually effective. If the pelvic floor has lost its elasticity from tears or multiparity, the half hand can well take its place, and supply the power which changes the direction of motion. If the pains are insufficient to give the necessary additional power, the deficient pains must be supplemented with the forceps. It is best, however, not to apply the forceps until the head has been rotated to an anterior position: first, because the application is more difficult, and the instrument is more likely to slip; second, because there is more risk of injuring the fœtal head. It has been shown in the case above that manual rotation is a feasible method; it is not usually difficult; hospital internes do it. But occa-

sionally it cannot be done, because of too snug coaptation of pelvis and head, or because the operator's hand is too large. In such cases the use of the forceps is indicated; but the instrument must be used with skilful hands. A double application is necessary, in a way not to be learned from books; and rotation must be effected before extraction is made. It is here that the straight forceps, without a pelvic curve, has its chief indication; for the straight forceps can so be used that rotation and extraction may both be accomplished with a single application of the instrument.

CASE XCVI

The writer saw this case in consultation with the family physician, after the expulsion of the placenta in the third stage of the patient's first labor, on account of hæmorrhage. The baby had been born normally, but was lost from asphyxia caused by a coiled funis. The post-partum hæmorrhage was found to be due to interference with normal uterine retraction by a small intra-mural fibroid in the right cornu. Uterine contractions were excited by a copious hot-water intra-uterine douche combined with fundal massage, and the bleeding was arrested.

Ten months later this lady became pregnant again, and the writer was asked to take charge of the case, because there were pecuniary reasons, regarding which no inquiry was made, why the patient should have a living baby. The case was carefully followed, and when six months advanced it was found that the baby was lying transversely, scapula right anterior (Sc. D. A.). The reason for this displacement of the fœtus from a normal longitudinal position was the interstitial myoma at the right cornu, which had enlarged to the size of a cocoanut. The fœtus remained in this position, and at full term was evidently not much above average size: the pelvis was of normal measure. When seen in active labor the os was found to be fully dilated, the membranes unruptured, and the position and presentation unchanged: shoulder, arm, and ribs were felt by the examining fingers. An assistant was sent for, and without waiting for a possible spontaneous version, or an impossible spontaneous evolution (with a baby of this size), the baby was delivered by internal podalic version. There was a dorsal displacement of the pubic arm; but the baby was rotated 180°, the pubic arm thus unwound, and extracted without fracture. The baby weighed eight pounds. The uterus was carefully controlled, and there was no post-partum bleeding. After a normal convalescence it was found that both uterus and fibroid had involuted, the latter seeming not larger than a hen's egg: both mother and baby were discharged well.

Comment. — The subject of the relation of uterine myomata to pregnancy and labor is a large one, and only a few points can be referred to in connection with this case. Of course submucous and pendunculated intra-uterine tumors may interfere with conception, cause abortion, and the latter may give rise to dystocia when large enough. Intra-mural growths may cause no trouble at all, or may act mechanically to displace the fœtus, interfere with normal uterine contractions, and thus delay labor or result in post-partum bleeding. Subserous growths may in no way interfere with normal uterine function unless they are low enough to act as mechanical obstructions in the birth canal, and even then, when low, they may retract and clear the way. Of course intra-mural myomata may obstruct the birth canal when located in the lower uterine segment or cervix. The effect on labor of low-seated myomatous tumors will be considered in another connection. Wherever the location, however, it is worthy of notice that the tumor enlarged by pregnancy very generally participates in the involution of the uterus and returns to its former size.

The pecuniary importance of the birth of a living baby sometimes lends an interest to a case, aside from the professional pride and sense of duty to have successful results in every case, if possible. Wills are sometimes drawn in which a legacy is contingent on the birth of living issue; and in the settlement of intestate estates much may depend on whether a posthumous child is born living or dead, as shown by the following case. A gentleman died leaving a son by a first wife, and a pregnant second wife; also a fortune of three hundred thousand dollars, and no will. The writer does not pretend to legal knowledge; but the understanding at the time was that had the second wife not been pregnant the estate would have been settled by giving her the widow's third, and the son the other two-thirds: the second wife being pregnant, however, the settlement was legally deferred until after the posthumous child should have been born. If this child were stillborn, it could not, of course, inherit, and the estate would be settled as though the second wife had not been pregnant. If the child were born alive, it

would share equally with the son the two hundred thousand dollars, while the widow's third would legally remain to her. But if the child died even five minutes after birth, it would have inherited, and the mother would be its legal heir: and if it lived, the mother, as its natural guardian, would have the spending of its income during minority; but the older son, in any contingency, if the baby were born alive, would lose one-half his patrimony, while the widow practically would double her inheritance. The writer was called in to deliver the widow in the presence of a medical witness; and after the baby was born and was crying lustily, several lay witnesses were called in, who surely could testify to the life of the hundred thousand dollar baby.

CASE XCIII

A multipara whose normal labour the writer did not [illegible] in her medical attendance twenty minutes after the placental delivery ran into [illegible] and the writer was called, being the nearest physician [illegible]

Diagnosis. — It was not difficult to make the diagnosis [illegible] through the partly protected mattress. The woman was very pale and anxious looking. There was not [illegible] to arouse the pulse.

Treatment and Result. — The relaxed and flabby uterus was found and grasped, and when with manual massage and [illegible] it had recovered in a measure its muscular tone, [illegible] were expressed by the method of Credé. The [illegible] of ergot was given subcutaneously; and after the uterus had been held and massaged for a half hour, and the ergot had taken effect, a firm abdominal bandage was applied. The placenta had been disposed of, and could not be inspected; but among the expressed clots was a large portion of the membranes.

Comment. — It is probable that the placenta was hastily [illegible] and that the uterus had not retracted [illegible] left his patient prematurely. It takes [illegible] for a uterus properly to retract, therefore third stages [illegible] be hurried. The third stage is the most dangerous stage of labour in the large proportion of normal cases, in which women deliver themselves; for however normal the delivery may have been, any uterus may bleed, if the third stage is not intelligently managed. It is often forgotten by the hurried attendant that the third stage does not end with the extraction of the placenta, but includes such additional time as may be necessary to secure good and permanent retraction. Moreover, no woman should ever be left twenty minutes after the supposed end of the third stage, even if the uterus then seems to be well shut down; it may relax, and bleeding may occur: to do his full duty the medical attendant needs to give two hours to post-partum observation of the woman and careful examination of the newborn child.

CASE XCVII

A multipara, whose detailed history the writer did not delay to take, is left by her medical attendant twenty minutes after placental delivery: not long thereafter hæmorrhage ensued, and the writer was called, being the nearest physician found at home.

Diagnosis. — It was not difficult to make the diagnosis. Blood had soaked through the poorly protected mattress; the woman was very pale and anxious looking; time was not taken to count the pulse.

Treatment and Result. — The relaxed and flabby uterus was found and grasped; and when with manual massage and ice-friction it had recovered in a measure its muscular tone, its contents were expressed by the method of Credé. The uterus empty, a dose of sterile ergot was given subcutaneously; and after the uterus had been held and massaged for a half hour, and the ergot had taken effect, a firm abdominal bandage was applied. The placenta had been disposed of, and could not be inspected; but among the expressed clots was a large portion of the membranes.

Comment. — It is probable that the placenta was hastily expressed in this case, and that the uterus had not retracted well when the doctor left his patient prematurely. It takes time for a uterus properly to retract, therefore third stages should never be hurried. The third stage is the most dangerous stage of labor in the large proportion of normal cases, in which women deliver themselves; for however normal the delivery may have been, any uterus may bleed, if the third stage is not intelligently managed. It is often forgotten by the hurried attendant that the third stage does not end with the extrusion of the placenta, but includes such additional time as may be necessary to secure good and permanent retraction. Moreover, no woman should ever be left twenty minutes after the supposed end of the third stage, even if the uterus then seems to be well shut down; it may relax, and bleeding may occur: to do his full duty the medical attendant needs to give two hours to post-partum observation of the woman and careful examination of the newborn child.

Fœtal Surface

Maternal Surface

SUCCENTURIATE PLACENTAE

The hæmorrhage in this case was not due to trauma, for had there been a deep tear of the cervix or lower birth-canal, or had there been an open rupture of a varicose vein, the hæmorrhage would have been perceived directly after delivery, and would have been controlled with proper suture. (Of course a vulvo-vaginal hæmatoma would require time for formation, and would be discovered later by the nurse, or at a subsequent visit by the doctor.)

It seems evident in this case that the doctor did not carefully examine the placenta and membranes: had he done so, he should have discovered that a large portion of the latter was retained, and have felt it his duty to remain with the patient and guard the uterus. Obviously the retained membrane was the cause of post-partum bleeding in this case, acting to interfere with permanent retraction of the uterus, and acting perhaps for a time to obstruct the cervix and cause a concealment of the bleeding all the while taking place into the gradually distending uterus. Had the doctor discovered that a portion of the membranes was retained, he might not have found it necessary to invade the uterus to remove it, for it might have been cast off by the continued contractions encouraged by uterine massage; but he should not have left in twenty minutes an unguarded uterus known to contain a considerable piece of the fœtal membranes.

A careful examination of the placenta and membranes occasionally reveals the fact that there are one or more succenturiate placentae, all cast off entire; sometimes, however, one of these supplementary placentae may be retained, as shown by the loss of substance, and by the vessel leading thereto through the membranes and sharply broken off. As in the case of retained membranes, it may or may not be necessary to invade the uterus to remove one of these small, retained, succenturiate placentae; it is often cast off without undue hæmorrhage under uterine massage; on the other hand, if bleeding cannot readily be controlled and the expulsion of the retained product brought about by massage and expression, it must be removed with the gloved fingers. In any event, even in the absence of bleeding, the patient should not be left under two hours, when it is known that a considerable

piece of membrane or a subsidiary placenta is still retained: even then the nurse should be warned of the facts, and the doctor prepared to answer a summons for secondary hæmorrhage.

Serious secondary hæmorrhage sometimes is due to the unskilfully attempted removal of a more or less adherent placenta, the hand grasping the lower border and pulling away what is supposed to be the entire placenta, but what examination would show to be only the free portion. Obviously a retained placenta should never be removed in this way, but should be curetted free from all attachment by the gloved fingers, and then removed entire, the hand being the last to leave the uterus.

CASE XCVIII

A young wife of nineteen, who had had her first baby normally two years before, in the eighth month of her second pregnancy began to have œdema of legs, hands, and face: for this she sought no advice. When nearly at term she began to have headache, and, after a week, blindness: the following day she entered the Boston Lying-in Hospital.

Diagnosis. — The history pointed with sufficient clearness to a toxæmic condition: examination showed a marked general œdema, and much impaired vision; the blood pressure was 160; the urine contained a large trace of albumin, also blood and casts.

Treatment and Result. — The patient was put on the usual eliminative treatment, and the œdema was much reduced; but headache and blurred vision persisted, and three days after admission the blood pressure rose to 165, and she had a convulsion. A Voorhees bag was then easily introduced. Eight hours later there was a second convulsion; but meanwhile the cervix had so far softened and dilated that under anæsthol anæsthesia the presenting breech was easily extracted. Following placental delivery there was considerable hæmorrhage. Inspection of the placenta showed that a succenturiate placenta was obviously retained: the uterus was therefore explored, the subsidiary placenta found and removed: the uterus then shut down well, and bleeding ceased; no ergot was given. There were no more convulsions, and the patient made a normal convalescence: she was discharged well with her baby on the eighteenth day, the eyesight restored, the blood pressure 130, and the urine normal.

Comment. — The only comment called for in this case is in regard to the post-partum hæmorrhage and its cause. The cause of the hæmorrhage was promptly discovered, and no time was lost in removing the succenturiate placenta, which was interfering with the normal retraction of the uterus. It is the writer's custom to receive the placenta and membranes in a sterile basin, and to examine them immediately while the nurse cups the uterus. If then it is found

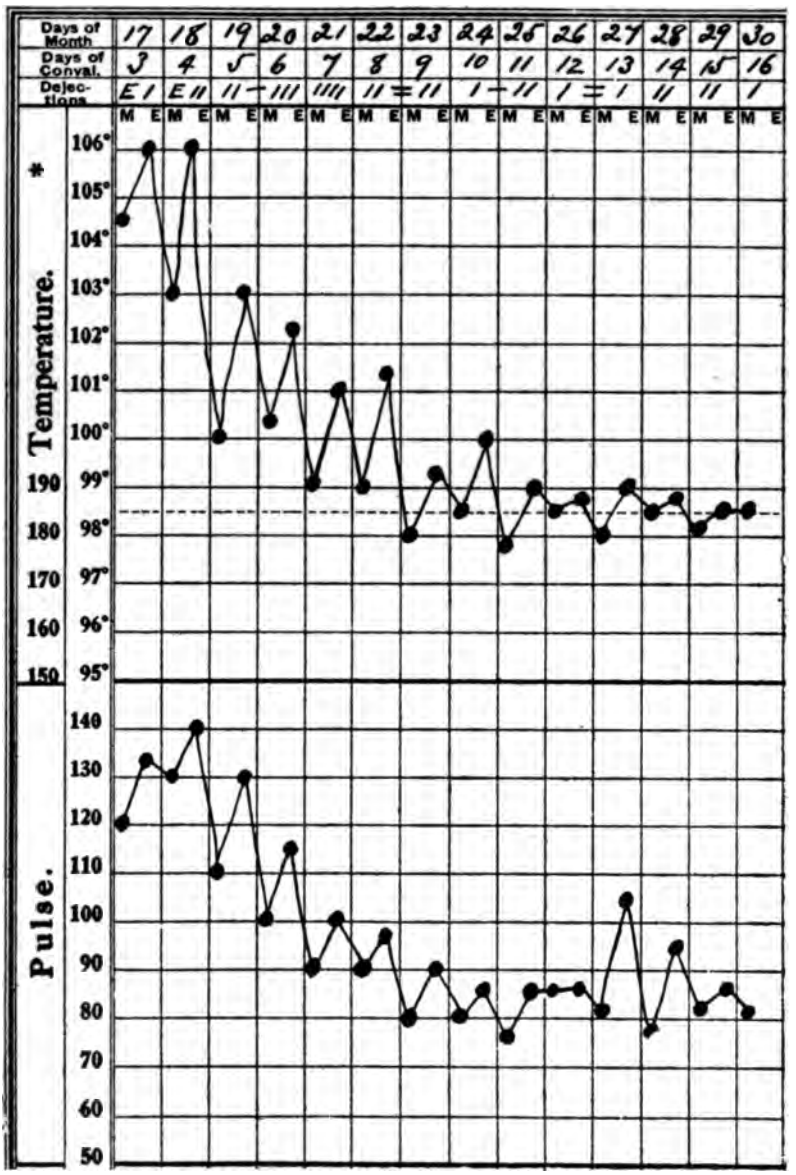
that a succenturiate placenta has been retained or any considerable portion of membranes, the asepsis will not have been broken, and unless the retained portions are soon extruded, and especially on the incidence of hæmorrhage, the uterus can quickly be emptied with the ready hand.

PUERPERAL PYREXIA

Note. — In the present, contemplated scope of case histories it would be impossible to exemplify all the protean manifestations of puerperal infection and other causes of fever: a few cases will be given, illustrating divergent types of infection; and then a series of short histories with temperature charts, which may be helpful in the diagnosis of the cause of puerperal pyrexia.

CASE XCIX

A young, slender secundigravida, whose first baby, a girl, was four years old, not wishing another child, attempted to induce abortion upon herself during the third month of preg-



nancy by passing a meat-skewer into the uterus. There was a slight amount of flowing, but no pain. On the afternoon of the second day, she had a chill, after which she felt feverish and went to bed with considerable pelvic and abdominal pain, and some further flowing. She passed a wretched night, and next morning, being in a high fever and severe pain, summoned her physician, who sent her to hospital.

At entrance she appeared flushed, restless, and in considerable pain. Temperature 104.6° F. Pulse 120. White count 13,000. The general physical examination was otherwise normal, except for tenderness and spasm throughout the lower abdomen. There was moderate flowing, and by vagina the uterus was felt enlarged to the size of three months' pregnancy, and very tender. The cervical canal would not admit a finger-tip. There were tenderness and resistance in both vaults, but no masses to be felt.

Evidently the uterus was infected, and this was held an indication for emptying it, even though the pregnancy might otherwise have been saved. The cervical canal was therefore gently dilated and tightly packed with gauze. This pack did not stain through until evening; but the pains became more severe throughout the afternoon. When the patient began to bleed through the gauze, the pack was removed. The cervix was found fully dilated, and the ovum was resting on top of the gauze. Gentle digital exploration of the uterine cavity revealed no retained products. A culture taken from the endometrium gave a subsequent mixed growth of streptococcus, staphylococcus, and colon bacillus. Bleeding was not excessive.

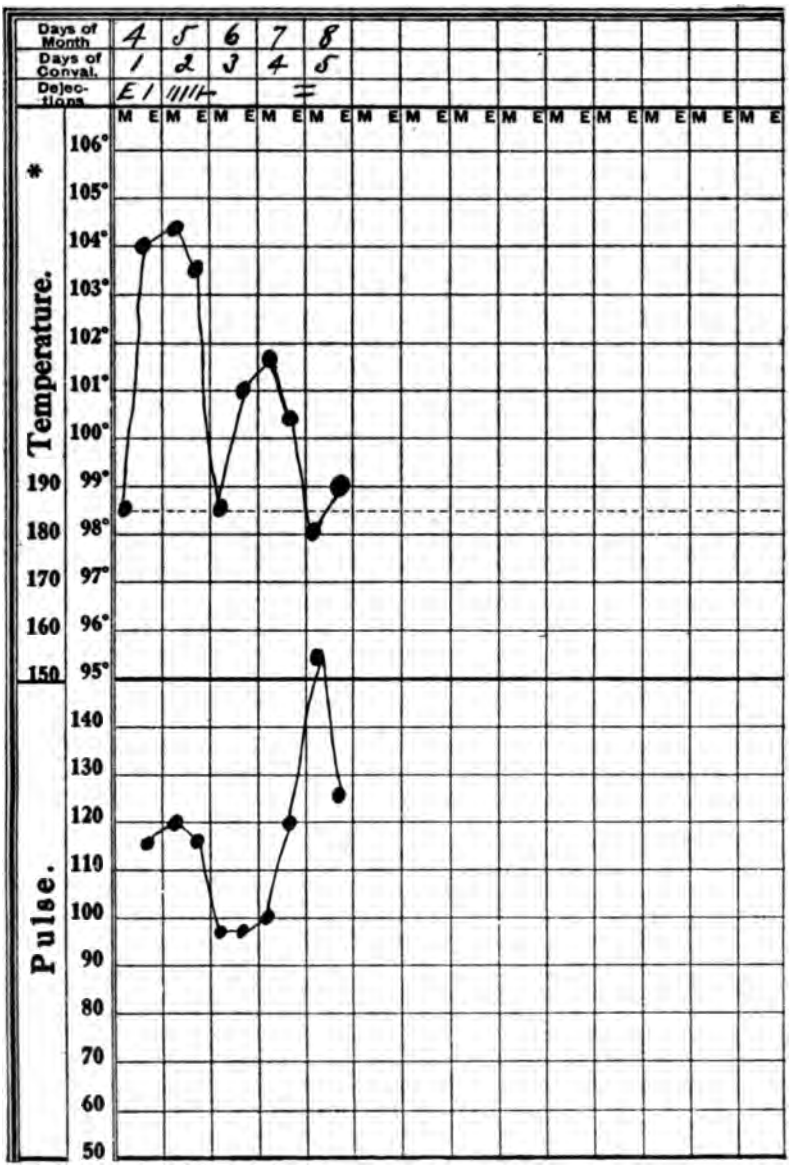
Without further treatment, the patient was put to bed in Fowler's position, on small doses of ergot by mouth, and with an ice-cap to the fundus. Next morning her temperature had dropped to 103°; but it rose in the evening, and the patient, refusing food, appeared profoundly septic. The lochia were scanty and slightly foul. The patient's bed was now moved out-of-doors, and a special nurse detailed to watch her and encourage her to eat. Next morning her temperature was 100.0°, her general appearance much im-

proved, and she was beginning to eat and relish her food. The temperature rose that afternoon, and continued irregularly elevated for several days; but the patient's general condition steadily improved. The bowels were freely moved by saline catharsis, and forced fluids were given by mouth. The patient, after going out of doors, ate and slept well. The lochia continued foul for a week. Ice and ergot were exhibited during this time. Pain ceased on the third day. The patient was up on the thirteenth day (tenth after emptying the uterus), and went home on the sixteenth day, more fortunate than she deserved, with a clear pelvis, and no apparent ill-effects from her criminal abortion.

Comment. — Not all criminal abortions result thus favorably, as the annals of hospitals and police courts testify. In this case recovery ensued, probably, from a good resistance, aided by measures to promote drainage and to contract the uterus, and especially by the therapeutic action of the open air. The value of fresh air treatment in the face of all forms of septic infection is yet to be fully appreciated: in the conditions of puerperal infection, once the uterus is empty, experience has taught those who have employed it, that open air treatment is our most valuable measure, aided, of course, by uterine drainage, measures to promote uterine contraction, and forced nutrition, — all measures, indeed, which will increase the patient's powers of resistance.

CASE C

An Italian woman of twenty-five entered hospital in primiparous labor with a temperature of 100° F., and with a pulse of 108. She was not examined vaginally, but received


Days of Month
4 5 6 7 8
Days of Conval.
1 2 3 4 5
Dejections
E 1 IIIII+ =
M E M E M E M E M E M E M E M E M E M E M E M E M E M E
Temperature.
106° 105° 104° 103° 102° 101° 100° 99° 98° 97° 96° 95°
190 180 170 160 150
Pulse.
140 130 120 110 100 90 80 70 60 50

the usual antiseptic preparation of the vulva and adjacent parts. In two hours she delivered herself normally of a six-pound baby: there was a slight nick of the perineum, thought to be too slight to need repair. During delivery she pulled hard on the pulling-strap. After labor the pulse was 90, and the temperature 98.6° F.; but the five o'clock temperature was 104° F., and the pulse 115. The woman felt perfectly well, and physical examination failed to disclose the cause of the elevated pulse and temperature. The next morning the temperature was 104.2° F., and the pulse 120: the white count was 15,000, and the physical examination still negative. The next morning the temperature was normal, and the pulse 98; but the patient complained of intense pain in the right forearm, the flexor surface of which was swollen, tense, red, and tender. Hot creoline soaks and poultices were employed; but the temperature rose to 101° F. that evening, and the infectious process, with œdema, extended to the upper arm. The following day the obviously septic arm was opened by two incisions in the fore, and two in the upper, arm, yielding a thin, dirty, sero-purulent fluid from subcutaneous tissue and flexor tendon sheaths. Poultices and soaks were continued; but while the temperature fell, the pulse rose, and the young woman died of general septicæmia on the fifth day. No port of entry of infection could be found on the hand. The culture from the discharge from the arm incision gave a pure streptococcus.

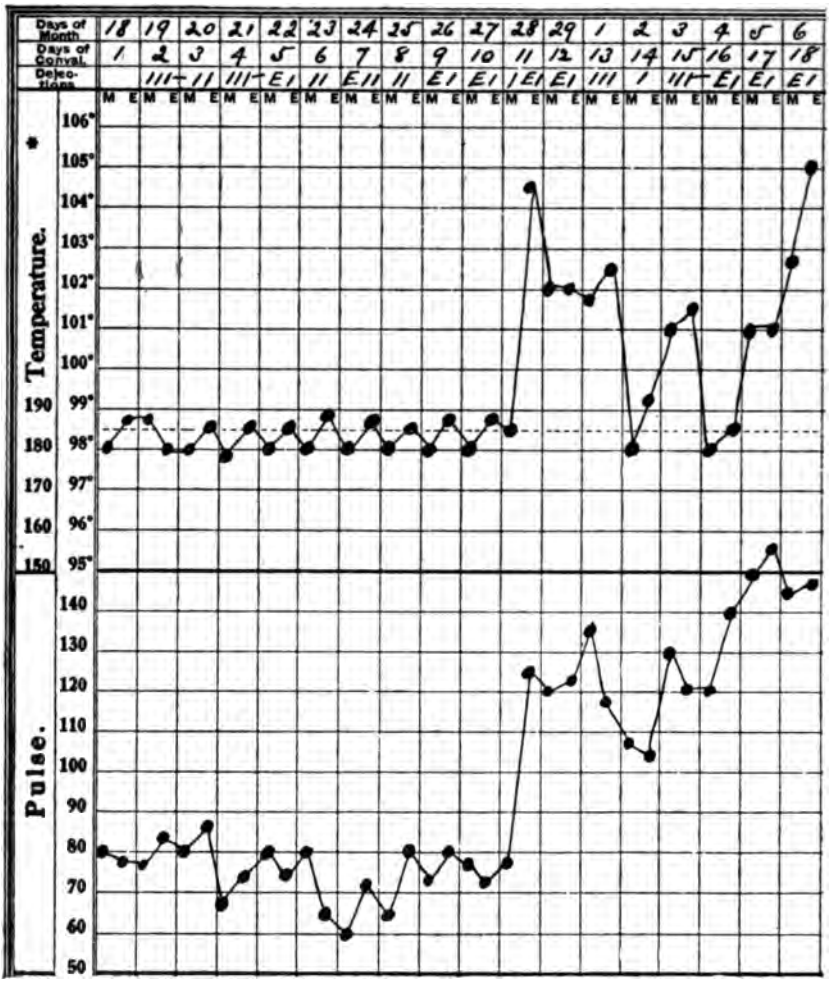
The baby died on the second day of acute broncho-pneumonia.

Comment. — In brief resumé, — a young primipara, apparently healthy, but with an unexplained pulse of 108 and temperature of 100° F., enters hospital in the night and delivers herself normally in two hours: she is not examined vaginally, but receives thorough antiseptic cleansing of the external field. The temperature is normal the ensuing morning, but rises to 104° F. that evening; a rapidly developing septic process localizes in the right arm, the *locus minoris resistentiae* perhaps, from pulling on the obstetric strap; there is no apparent, local port of entry of infection on the hand; the streptococcus is found in the evacuated pus;

death ensues from general streptococcæmia on the fifth day. It is inconceivable that infection could have entered by the genital tract in labor, not only because the tract was not invaded, but because had infection thus occurred, its manifestation could hardly have been so speedy. It seems reasonable to believe that the young woman must have been a streptococcus carrier, or have been infected prior to labor, and that under the depressed resistance of parturition the prior infection developed rapidly, localizing in the arm, but becoming general, — the baby succumbing to an infectious broncho-pneumonia. No treatment generally avails under such conditions.

CASE CI

An unmarried woman of twenty-two, who had had a three months' miscarriage two years before, entered hospital in labor at full term. She was not examined vaginally, but



was given a complete antiseptic preparation, and delivered herself normally in eleven and a half hours: a superficial tear of the perineum was closed with two silkworm-gut sutures. The ten-day convalescence was afebrile, the tear healed by first intention, and the young woman got up feel-

ing perfectly well, and intending to go home the next day. The next day, however, she had a chill, complained of sore throat, and her temperature rose to 104.6° F. Culture from the throat later showed pure streptococcus. The next day the abdomen became slightly distended; later, tender, tense, and rigid, with pain referred up into the right axilla and chest. The picture of general peritonitis gradually developed, and death ensued eight days after the chill and initial rise in temperature: the baby was discharged, well.

Necropsy. — The body of a well-developed and well-nourished woman, 5 feet and 5 inches in length. Post-mortem rigidity and lividity present.

Abdomen. — Markedly distended. Subcutaneous fat 3 cm. in thickness. On incision the distended portion is found to be due in part to gas and partly to free purulent fluid which fills every portion of the peritoneal cavity. Coils of intestine are injected, covered with flakes of fibrin and lightly matted with fresh adhesions. Appendix normal. Careful examination of the stomach and intestines shows no perforation or lesion of the mucous membrane.

Spleen. — Slightly enlarged. Soft. Not otherwise remarkable.

Liver. — Color, markings and consistency, normal.

Kidneys. — Capsule strips easily. Cortex 5 mm. in thickness. Color, markings and consistency, normal.

Genitalia. — Uterus well involuted. Normal position. Tubes normal. Ovaries normal. No perforation or other source of infection from vagina discovered. Culture from the interior of the uterus shows no growth. Culture from peritoneum and pleura shows streptococcus and colon bacillus.

Thorax. — Both pleural cavities contain each about 200 cc. purulent fluid similar to that described in abdomen.

Lungs. — Slightly collapsed, but without consolidation. Pericardial cavity contains about 20 cc. of clear, straw-colored fluid.

Heart. — Valves and myocardium normal. Heart not otherwise remarkable.

Head. — Not examined.

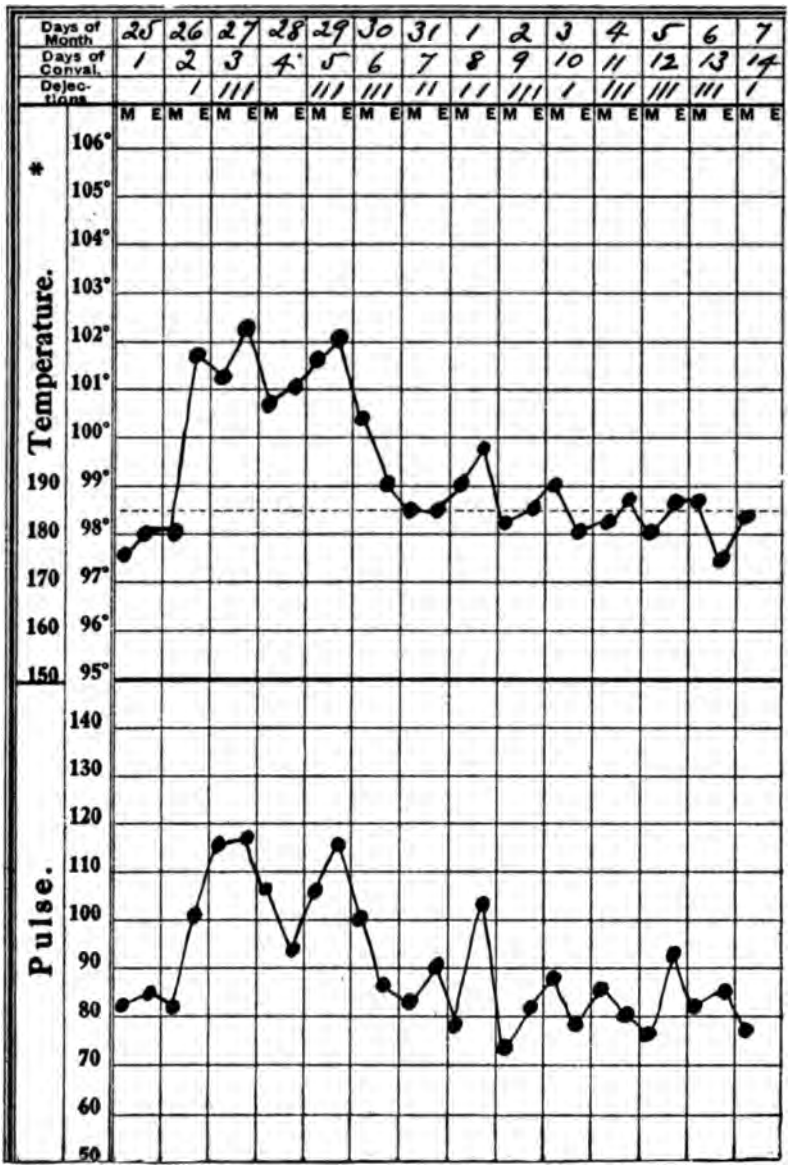
Anatomic Diagnosis.

General streptococcæmia.
Bilateral pyothorax.
General purulent peritonitis.
Secondary infection with colon bacillus.

Comment. — Here, then, was a case of streptococcus invasion, evidently by the tonsil, and by descending infection reaching the peritoneum. It occurred at a time when there was much streptococcus tonsillitis in the community, and a number of infected cases in hospital. Notwithstanding the normal labor and freedom from genital infection, the depressed resistance of the puerperal state made the patient an easy victim to general septicæmia, once the organism had passed the port of entry.

CASE CII

After a normal primiparous labor a young mother had an abrupt rise of temperature to 101.8° F. on the evening of the second day, with a foul pad, and a high, tender fundus: a culture from the uterus was taken.



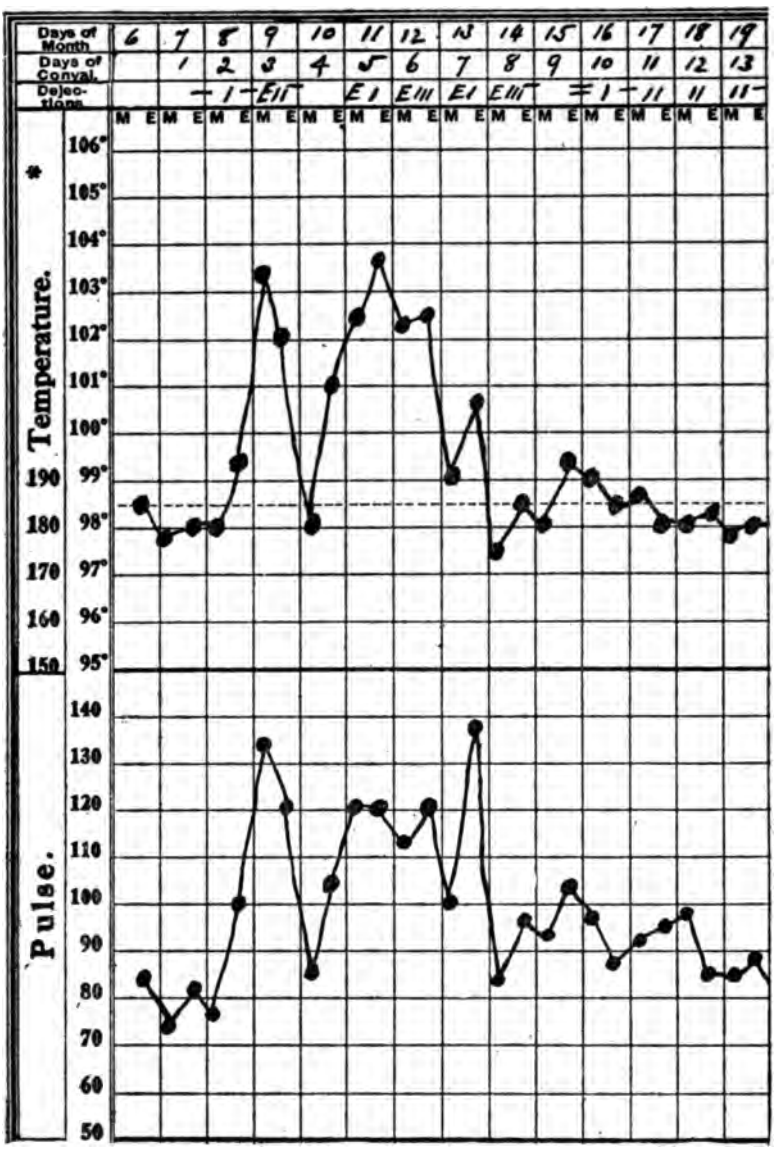
Diagnosis. — There seemed little need for a differential diagnosis, and the report on the culture next day gave a mixed growth of streptococcus, staphylococcus, and colon bacillus.

Treatment and Result. — Aside from reasonable catharsis, supportive measures and nutrition, this patient was treated on the fourth, fifth, and sixth days with a prolonged uterine irrigation with salt solution, followed by six ounces of 50 per cent alcohol. On the seventh day the temperature was normal, and the patient was discharged from hospital, well, on the fourteenth day.

Comment. — This case occurred in 1908; and at that time uterine irrigation was freely employed in the treatment of sepsis. Alcohol was also used as a uterine antiseptic, either by irrigation or on gauze strips. Many favorable results were obtained; but continued experience has convinced the writer that as a rule it is wiser not to invade the uterus, but to rely on postural drainage, ice to the fundus, ergot, forced nutrition, and fresh air, if possible placing the patient in the open air.

CASE CIII

A quadripuerpera, whose labor in hospital had been quite normal, had an abrupt rise of temperature on the third day from 99.2° F. to 103.2° F., the pulse going to 132.



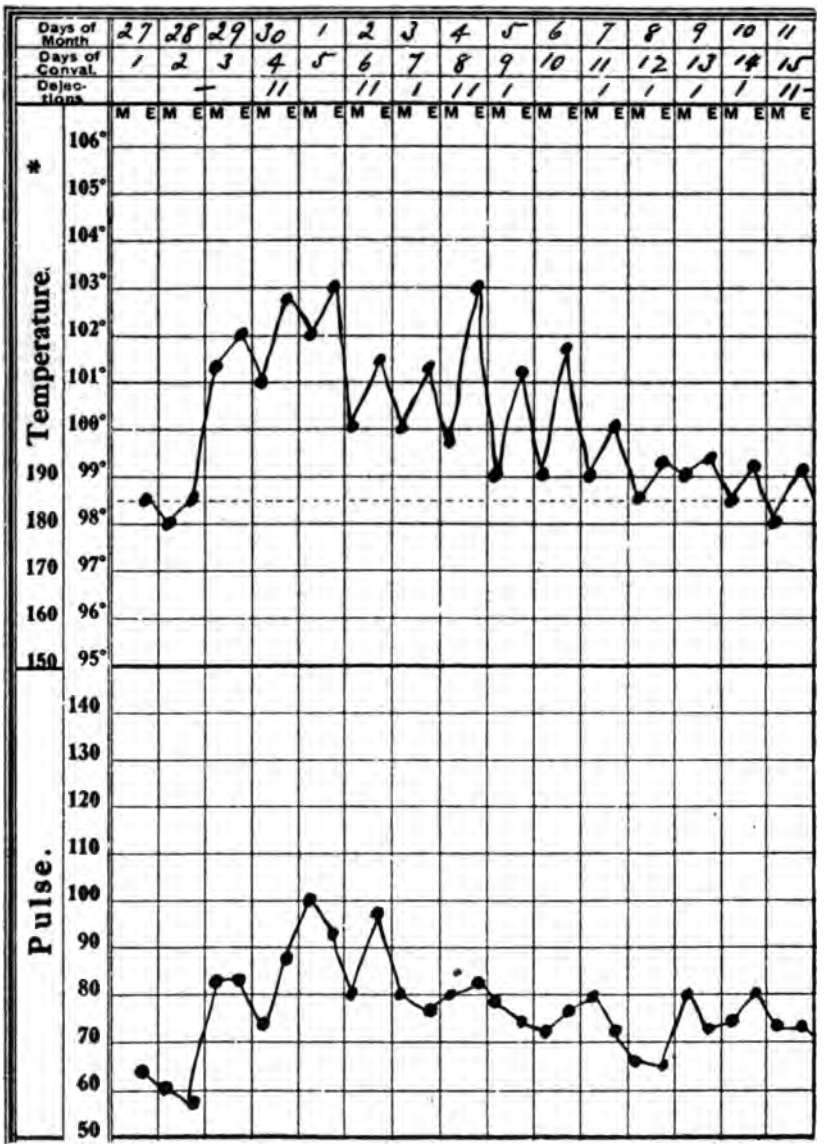
Diagnosis. — General physical examination revealed no cause for the febrile condition; but the uterus was not proportionately involuted, and was very tender. Following the only safe rule, that unless other adequate cause can be found for puerperal pyrexia in the first week, septic infection must be presumed, the writer directed that a culture be taken from the uterus, and a thorough irrigation be given with saline solution. Next day the morning temperature was 98°; but the report on the culture was pure streptococcus: the diagnosis of septic puerperal endometritis was therefore established.

Treatment and Result. — In view of the morning normal temperature, the uterus was not that day invaded; but the evening observation showed an elevation to 101° F. The patient was raised to Fowler's position for drainage, ice was applied to the fundus, and ergot given. The next day, the temperature still climbing, the uterus was again irrigated, and a laparotomy strip soaked in 50 per cent alcohol was loosely placed therein: this procedure was repeated the following day, although the pulse and temperature had fallen somewhat. The next day, the seventh *post partum*, the morning temperature had dropped to 99° F., the uterus was involuting and was less tender, and there was no further intra-uterine treatment: the woman was discharged, well, on the eighteenth day.

Comment. — The invasion in this case was very characteristic of streptococcus infection; but the organism was evidently not especially virulent. Prompt treatment may perhaps have prevented septicæmia, and limited the infection to the uterus, with the help of an efficient protective zone of white cell migration. But in pure streptococcus infection of the genital tract, the writer is pessimistic as to the value of local treatment, and inclines to the belief that the therapeutic measures of greatest value are those which foster the patient's resistance, — open air, forced nutrition, and sun light. Virulent infection yields to no treatment, save the grace of God; milder assaults may successfully be warded off by the prompt use of antisepsis, and by strengthening the reserves.

CASE CIV

A hospital patient bore her tenth child normally, and did well for two days; but on the third day there was an abrupt rise in temperature, from normal to 101.2° F. She had no subjective symptoms, and the pads were reported not foul,



which, with the abrupt febrile action, directly suggested streptococcus infection.

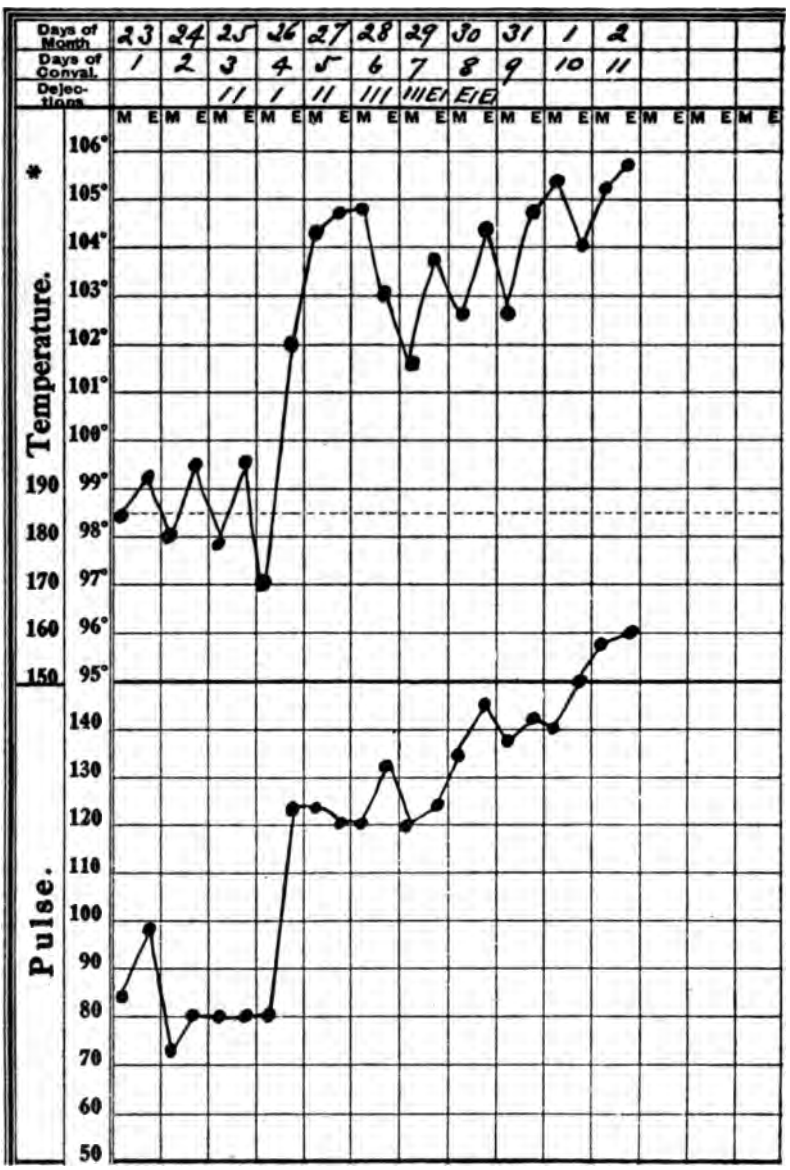
Diagnosis. — Nothing could be found on the general examination to account for the fever; nor could it be shown that anything had occurred to cause an emotional brainstorm, which so often causes a febrile movement. A culture was taken from the uterus, followed by copious irrigation. That evening the fever reached 102° F., and for the ensuing two days the temperature climbed, step-ladder fashion, lower in the morning, higher at night. The culture was reported as showing pure streptococcus, and the diagnosis was thus definitely established.

Treatment and Result. — Aside from the therapeutic measures generally employed, the uterus was irrigated on the fourth and fifth days: thereafter, pulse and temperature gradually declined, and the patient was discharged, well, on the sixteenth day.

Comment. — Here, again, was a relatively mild infection, recovered from, whether from treatment or from effective resistance, who knows? Universal peace on the one hand, conscientious and intelligently effective asepsis on the other, may prevent or ameliorate the horrors of war and its personal, physical consequences to human kind; but ultimate results depend very largely on the strength and aim of the enemy's artillery, and much on the courage and staying powers of the assaulted.

CASE CV

A tertiipara entered hospital at full term, and delivered herself *sua sponte* in the care of an interne. Convalescence was apparently progressing normally, when, on the evening



of the fourth day, the temperature rose from 97° to 102°, and the pulse from 80 to 124. Next morning the temperature had risen two degrees higher, and the clinical picture was that of septicæmia.

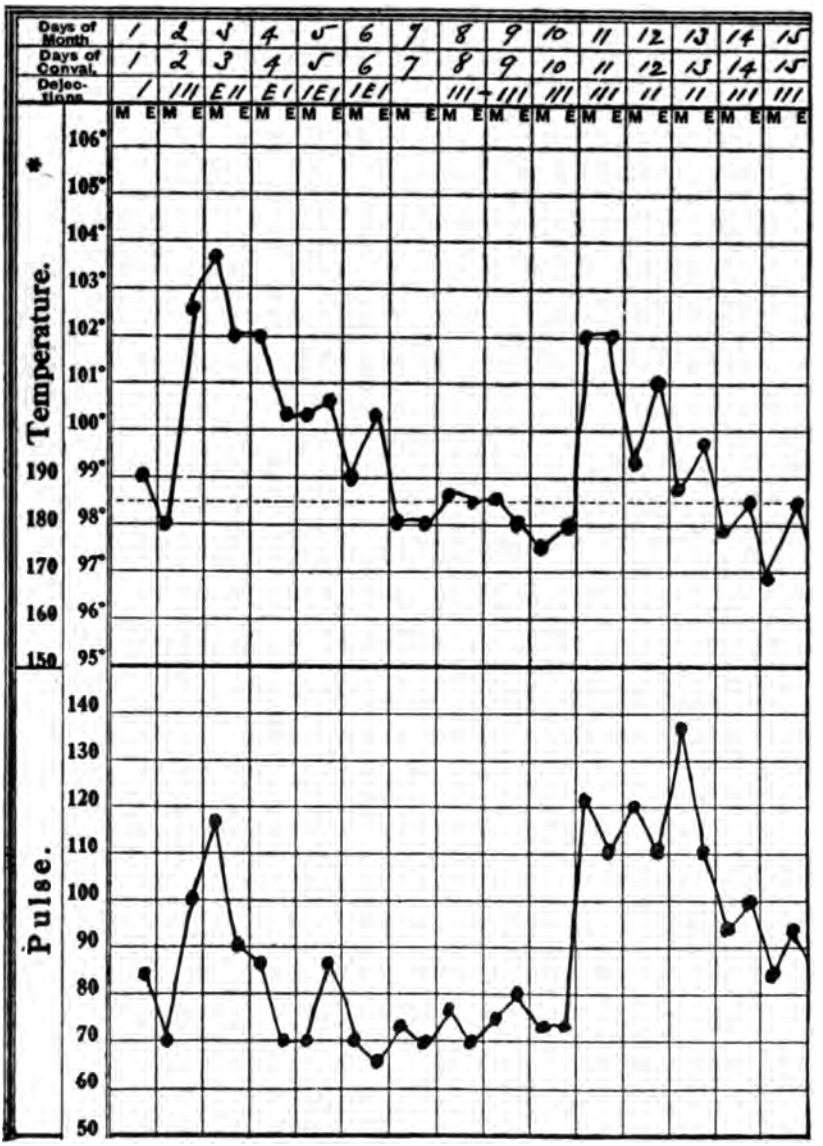
Diagnosis. — General physical examination revealed no cause for pyrexia. The lochial discharge was scanty, but not foul; the fundus uteri was high, and the uterus tender; there was a tender resistance in the right lower quadrant. A culture from the uterus was reported the next day to show pure streptococcus.

Treatment and Result. — The bowels were thoroughly opened, and the uterus was irrigated with a copious douche of saline solution: this was on the sixth day *post partum*, the day when the report on the culture was received: supportive treatment was also instituted. The following day the morning temperature was 101.5°, a drop of over three degrees; but fever increased thereafter, and on the ninth day the uterus was again irrigated: stock streptococcus vaccine was also employed. There was, however, progressive peritoneal involvement, and the patient succumbed on the eleventh day.

Comment. — This case was dealt with seven years ago, to wit, in 1908. At that time treatment with vaccines was tried in a number of cases, both the stock vaccines and the autogenous; but although some cases recovered, the conclusion was reached that this treatment was of little value in streptococcus infection.

CASE CVI

A multipara entered hospital with a shoulder presentation, and was delivered by internal podalic version. On the evening of the second day the temperature had risen from normal to 102.5° F., and the pulse to 100. The woman com-


Days of Month
Days of Convalescence
Dejections
Temperature.
Pulse.
M E M E M E M E M E M E M E M E M E M E M E M E M E M E M E
106° 105° 104° 103° 102° 101° 100° 99° 98° 97° 96° 95°
190 180 170 160 150
140 130 120 110 100 90 80 70 60 50

plained of sore throat, but of no other symptoms, and there were no physical signs.

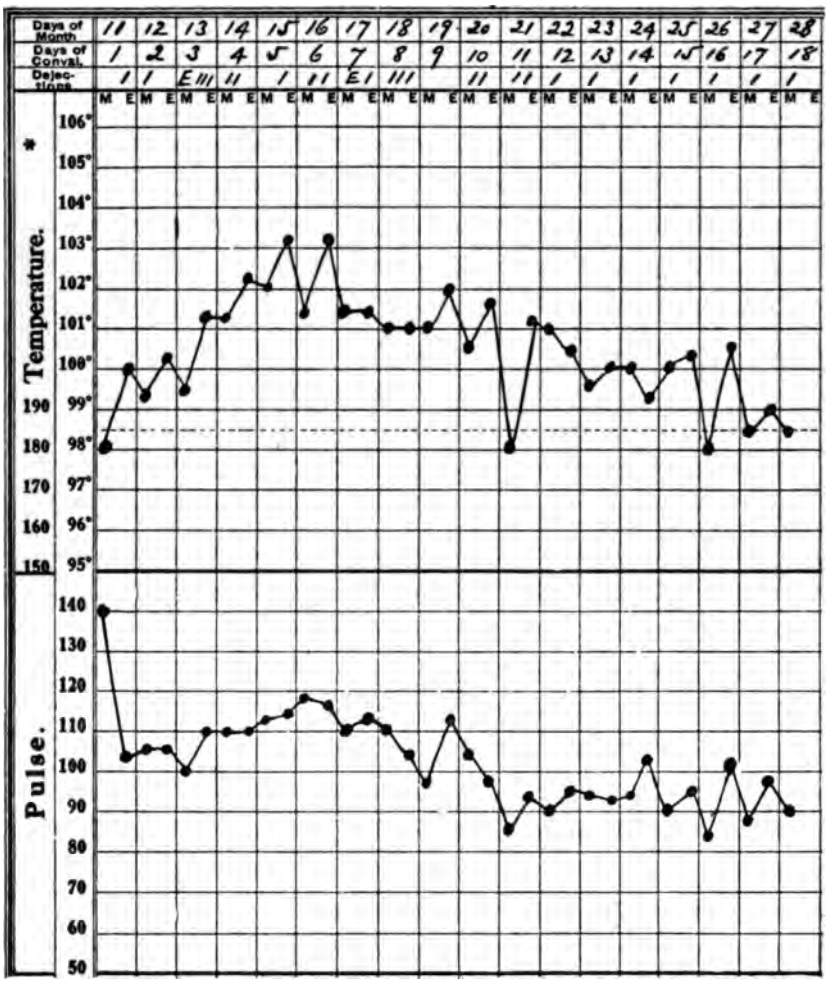
Diagnosis. — Cultures were taken from the throat and from the uterus, and thereafter the uterus was irrigated with normal saline solution: the lochia seemed in no way abnormal. The cultures were reported as showing a mixed growth, the streptococcus predominating.

Treatment and Subsequent Course. — An antiseptic gargle was given and an ice collar applied to the throat. The genital tract was not again invaded, after the first irrigation; but the woman was raised for better drainage, an ice bag applied to the fundus, and half dram doses of ergot given three times a day. The chart shows the gradual decline of pulse and temperature, and a sharp exacerbation on the eleventh day, which also declined. The woman was discharged, well, on the seventeenth day.

Comment. — Whether the primary port of entry in this case was the uterus or the tonsil the writer is unable to say. The case entered at a time when there was much streptococcus tonsillitis in the community; and a number of deaths from streptococcæmia and peritonitis occurred, not only after labor, but in men and women after surgical operation. The writer observed a number of these cases, and was cognizant of others. Some of the puerperal cases occurred in women who delivered themselves, and were not examined vaginally. In Case CI the fatal infection by the throat came after ten days of afebrile puerperium. From his clinical observation it seemed to the writer that the case under consideration received her initial infection by the tonsil, indeed that she entered hospital already infected, as evidently did Case C, and that the organism rapidly passed to the uterus by the blood stream. On the other hand, some observers apparently believe it more likely that infection enters the uterus first, and is speedily transmitted to the tonsil. This belief would hardly hold good in Case CI, nor in cases developing fatal peritonitis ten days after normal convalescence from surgical operation. Evidently there is room for further research, both clinical and bacteriological, in this subject.

CASE CVII

After a low forceps delivery in hospital a primipara had a uterine hæmorrhage, and the uterus was packed to control the bleeding. There was an immediate and progressive rise



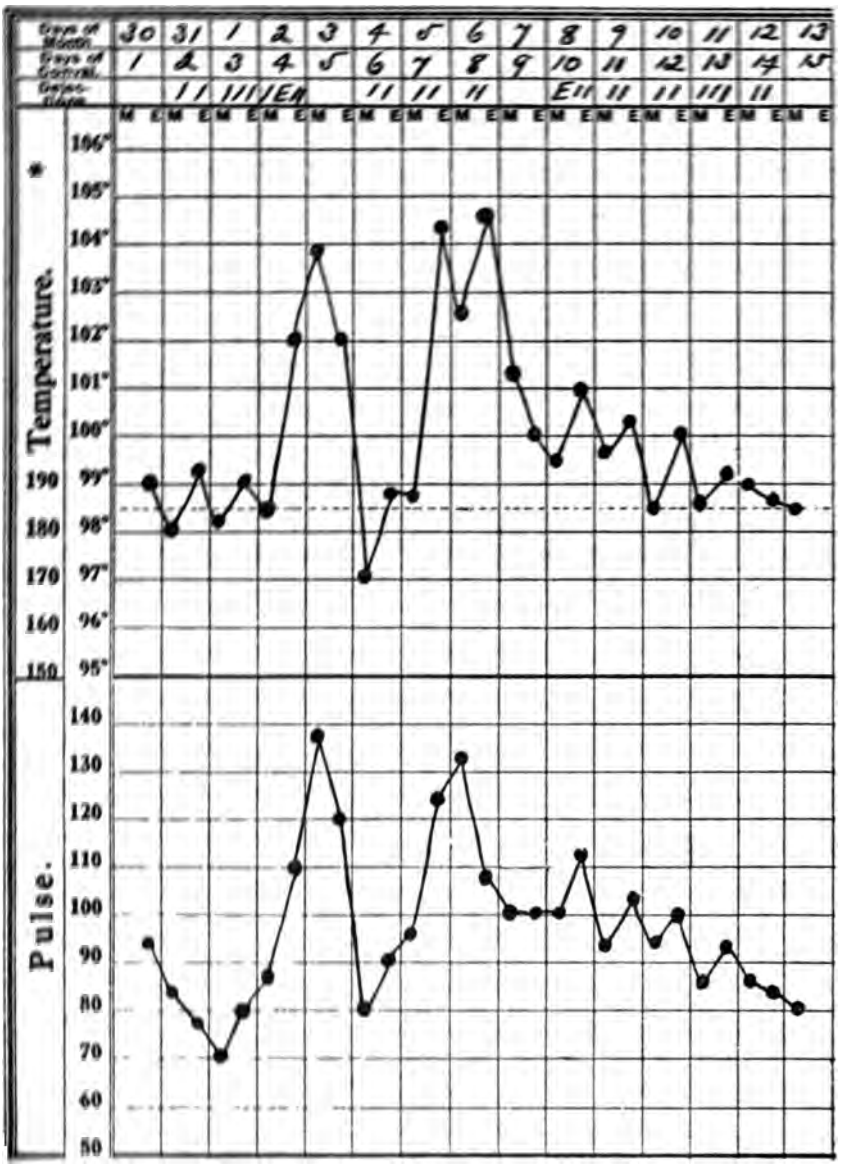
of temperature, step-ladder fashion, and although there were no abdominal signs and no abnormality in the lochia, the clinical picture seemed typical of uterine infection, and the uterus was freely irrigated. Later, however, it was found that there were tenderness in the right costo-vertebral angle

and a pus-laden urine, and it seemed clear that the infection was in the pelvis of the right kidney.

Treatment and Result. — Milk diet, forced fluids, ice-bag, and hexamethylenamin were prescribed, and recovery by lysis had occurred by the eighteenth day.

CASE CVIII

A primipara in hospital was delivered with low forceps: the puerperium progressed satisfactorily, the bowels had moved adequately, and the temperature was normal on the



morning of the fourth day: that evening, however, the pulse rose to 110, and the temperature to 102° F. At the visit next morning the pulse was 138, and the temperature 104° F.: the woman complained of no subjective symptoms.

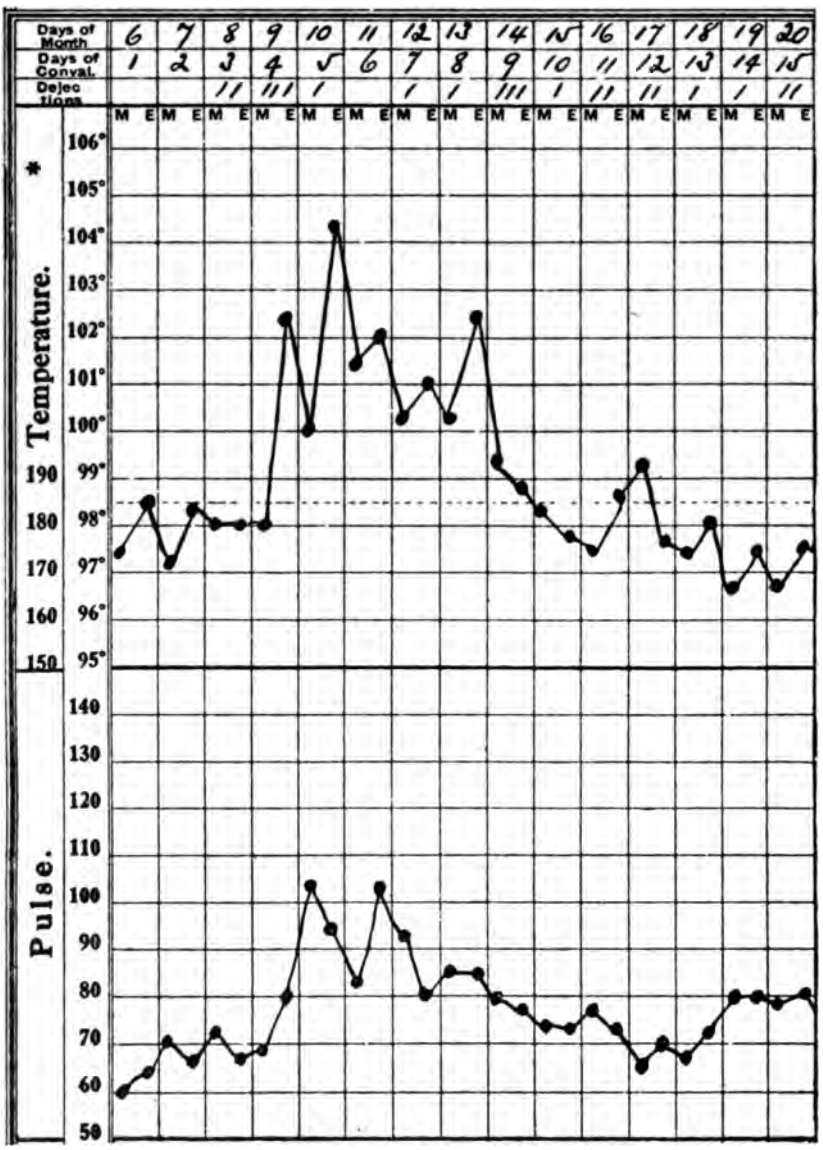
Diagnosis. — The lochia seemed normal in amount and appearance; the uterus was involuting, and was not pathologically tender; the breasts gave no sign of trouble; general physical examination, including inspection of the throat, showed no cause of fever; but there was marked tenderness in the region of the right kidney, and considerable pus was reported in the urine: the diagnosis of pyelitis was made.

Treatment and Result. — The direction was, — milk diet, copious water in-take, hexamethylenamin, gr. V every four hours. There was a pseudo-crisis the next day; but on the evening of the following day the temperature had risen from normal to 104.2° F. The treatment was continued, and there was an ultimate recovery by lysis: the urine was free from pus on the thirteenth day.

Comment. — While not, of course, positively known, it was thought that the infection was from the intestine by the lymph stream to a previously displaced kidney.

CASE CIX

A quintipara with marked varicosities of both legs entered hospital, and was normally delivered. On the fourth day, the temperature rose sharply from normal to 102.4° F., with complaint of pain in the left leg.



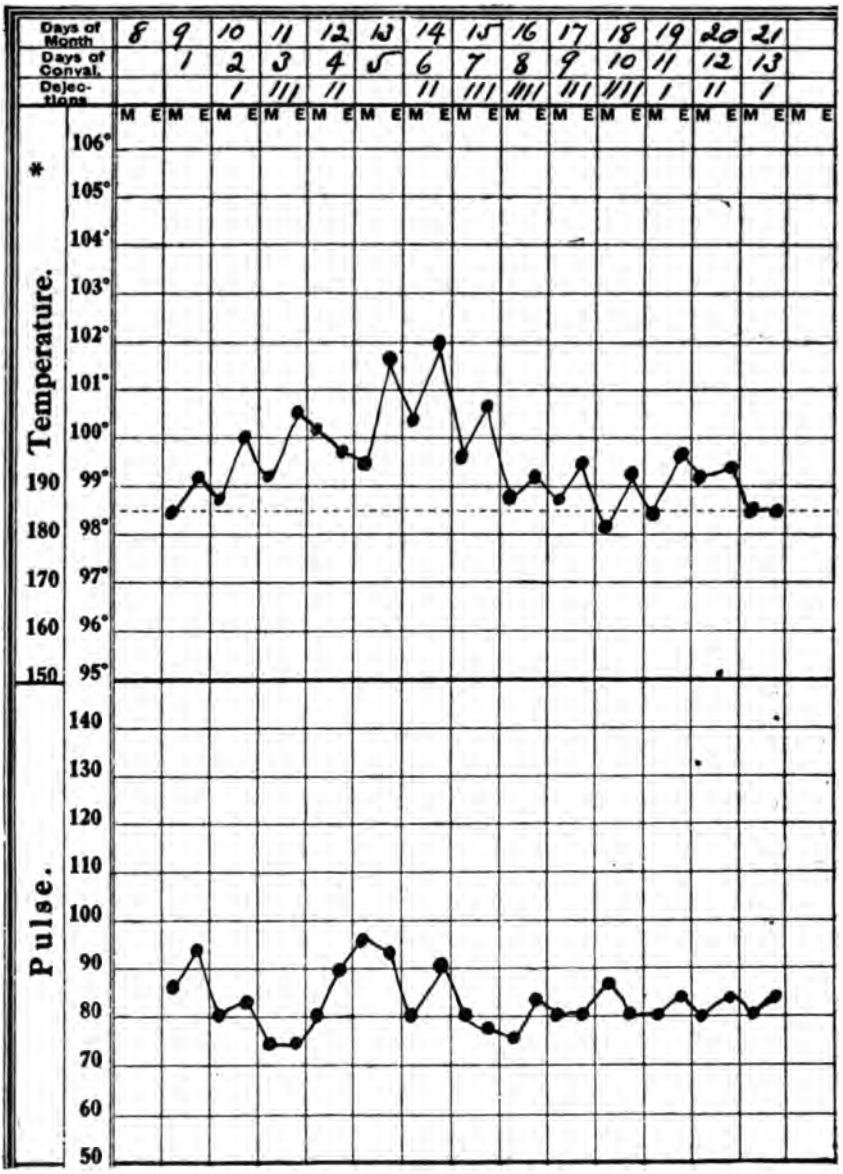
Diagnosis seemed simple in this case: thrombosis had evidently occurred in the sluggish venous current of the left leg, with resultant phlebitis, — milk leg as popularly known.

Treatment and Result. — The house surgeon applied a pillow-splint and ice-bag, and gave citric acid: there was a gradual subsidence of pulse and temperature, and the patient went home without symptoms.

Comment. — The dangers of embolism are well known in these cases; and the question of importance is, how soon, after the subsidence of pain and fever, is it safe to allow a patient to get up and go home. The question arises not only in the thrombo-phlebitis following labor, but in the not infrequently observed incidence after hysterectomy. Experience has seemed to show that after a complete rest in bed for a week or ten days with a normal temperature, the risk of embolism is sufficiently remote to warrant a gradual use of the affected limb.

CASE CX

A quadrigravida in the eighth month entered hospital for ante-partum hæmorrhage, found to be due to complete placenta prævia. She was delivered by internal podalic version



and extraction. There was a steady, step-ladder rise in temperature, with development of tenderness along the right saphenous and popliteal veins, and a tender, indurated swelling in the right popliteal space.

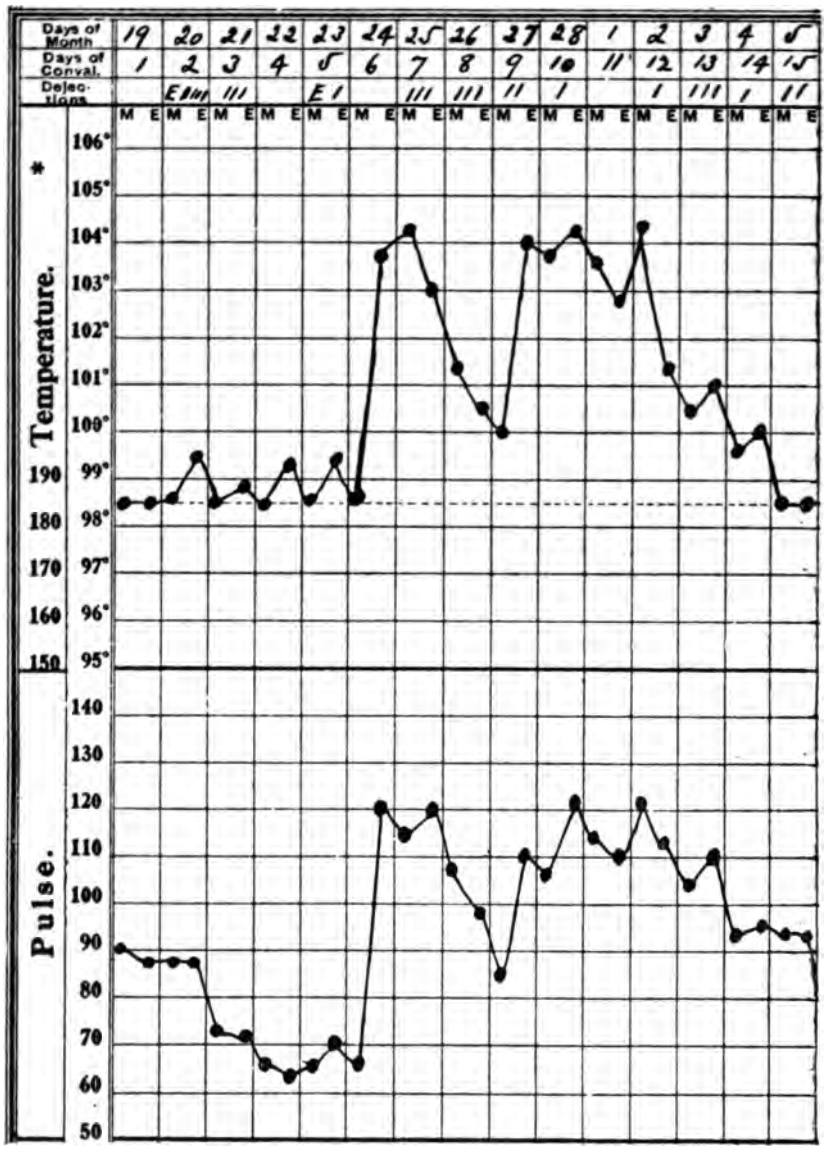
Diagnosis. — There was no difficulty in establishing the diagnosis of septic thrombo-phlebitis.

Treatment and Result. — A pillow-splint and ice-bag relieved the pain, swelling, and tenderness; and the fever gradually declined to normal.

Comment. — As elsewhere stated, and well-known, a parturient woman is an easy victim to infection after the blood-loss of placental detachment, whether the placenta is normally seated or prævia. Infection will occur and does occur in such cases, even with the most conscientious asepsis at present known. This is one of the discouragements in the present era of medical knowledge.

CASE CXI

A young primipara was delivered in hospital with low forceps, and was convalescing normally, when on the sixth day there was an abrupt rise of pulse and temperature from nor-



mal to 120 and 103.8° F., respectively: pain in the left lower quadrant was the only symptom complained of.

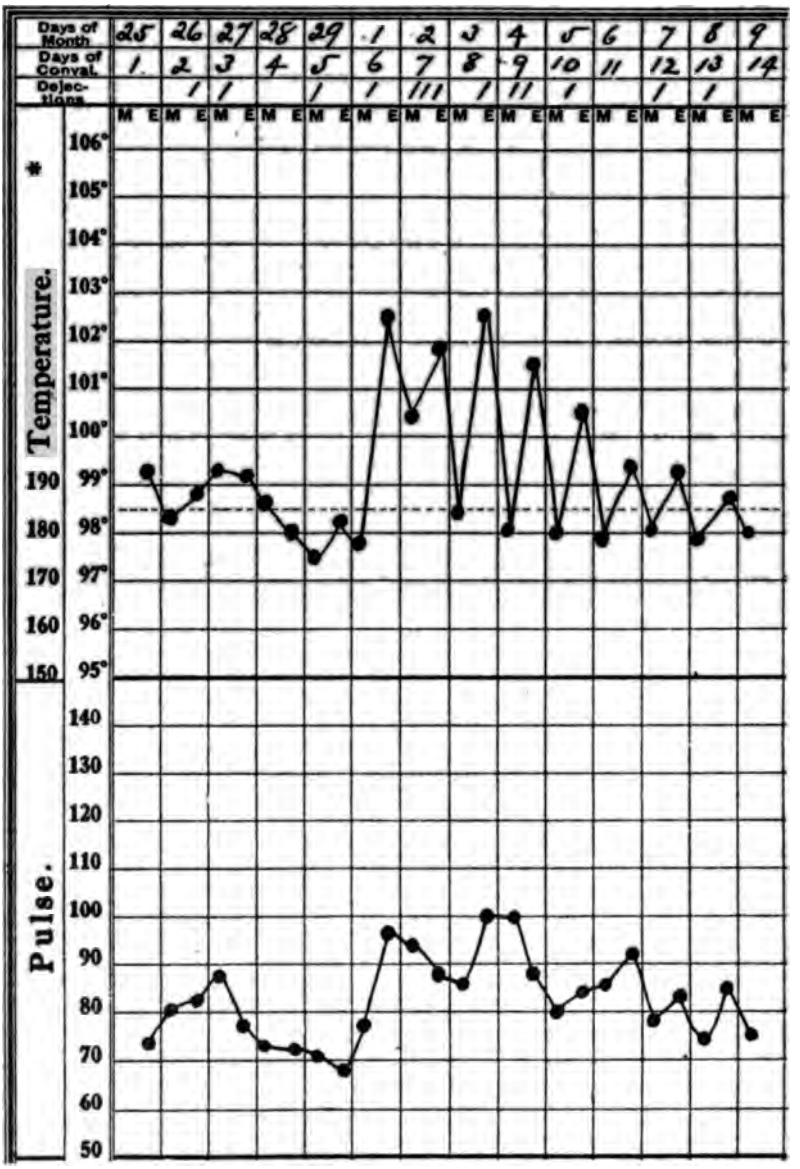
Diagnosis. — It was late for the first manifestation of infection in labor, and it was thought inadvisable to explore the uterus. On the other hand the localization of the pain and tenderness seemed to point clearly to a tubal invasion.

Treatment and Subsequent Course. — The pain and tenderness subsided under reasonable catharsis and ice-bag, and three days later the temperature had gradually fallen to 100° F. On that day, however, a similar pain developed on the right side, and a tender mass was felt in the right vault. The same treatment was followed, and the chart shows the gradual subsidence of the fever.

Comment. — Although unsupported by bacteriological evidence, the clinical picture in this case was that of gonococcus tubal infection, the organism making its way from the cervix or upper vagina through the barriers broken down by the dilatation of labor. This is not an uncommon occurrence when primary infection has taken place during pregnancy, or perhaps before, and is probably the commonest cause of so-called one-child sterility. It is very rarely that surgical treatment is indicated during the puerperium; but after successive later exacerbations, salpingectomy or tubal resection is often necessary for the relief of symptoms.

CASE CXII

A quadripara was delivered in hospital with low forceps, and was convalescing without fever until the sixth day, when she complained of pain in the right lower quadrant;



the temperature that evening had risen from normal to 102.5° F.

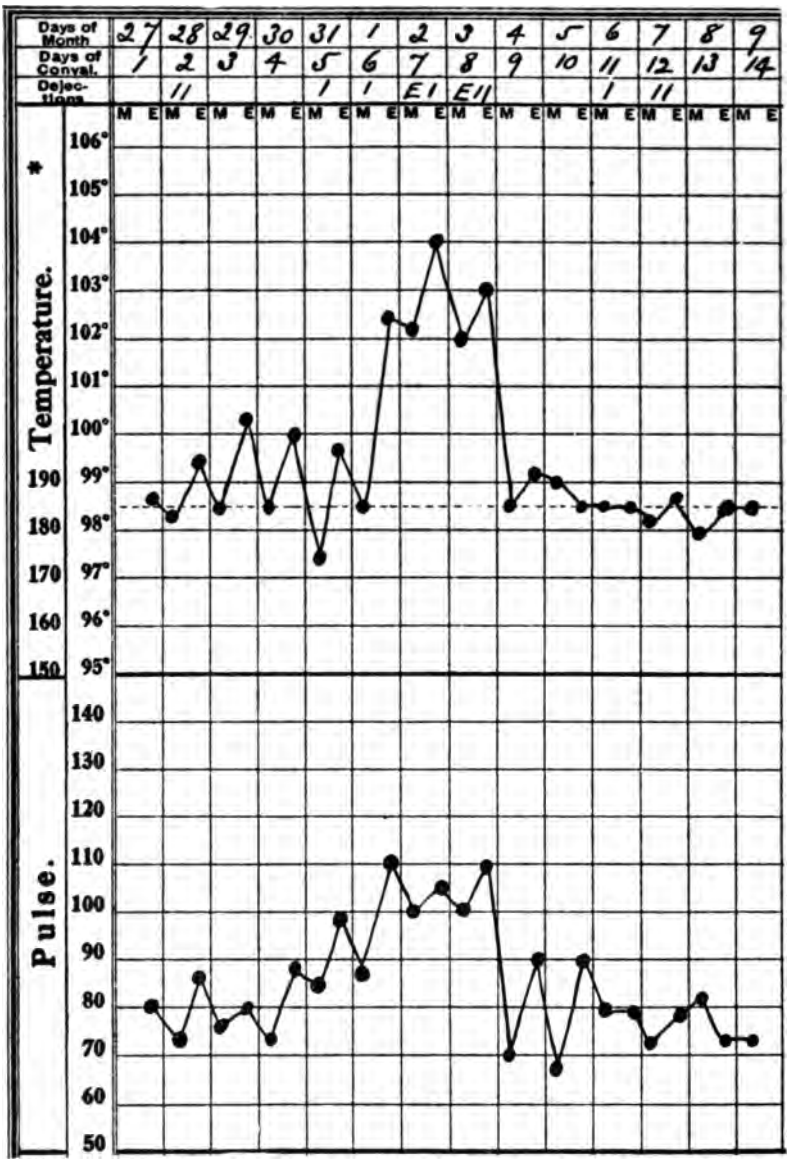
Diagnosis. — The patient stated that she had had similar attacks of pain in the same place from time to time ever since the birth of her first baby. Bimanual pelvic examination revealed tenderness and moderate spasm to the right of the uterus, and a tender mass, evidently the right tube, was felt. There was no evidence of any recent infection.

Treatment and Result. — Rest, moderate saline catharsis, and ice-bag soon relieved the pain, and the temperature gradually fell to normal.

Comment. — Salpingitis in this case was apparently of puerperal origin, dating back to the first labor. It is well known that exacerbations of the dormant tubal inflammations are very likely to occur from the stress of labor, as well as from any other cause which may depress the resistance, or mechanically disturb a quiescent inflammatory process, — such as taking cold, over-exertion, undue coitus, the injurious pressure of unwisely applied pessaries. Very often in the puerperium the exacerbation does not occur until after the first week, when it is less likely to be mistaken for a uterine infection.

CASE CXIII

A young primipara in hospital was normally delivered. The evening temperature was 100° F. on the third and fourth days, but was not regarded in the absence of symptoms: the



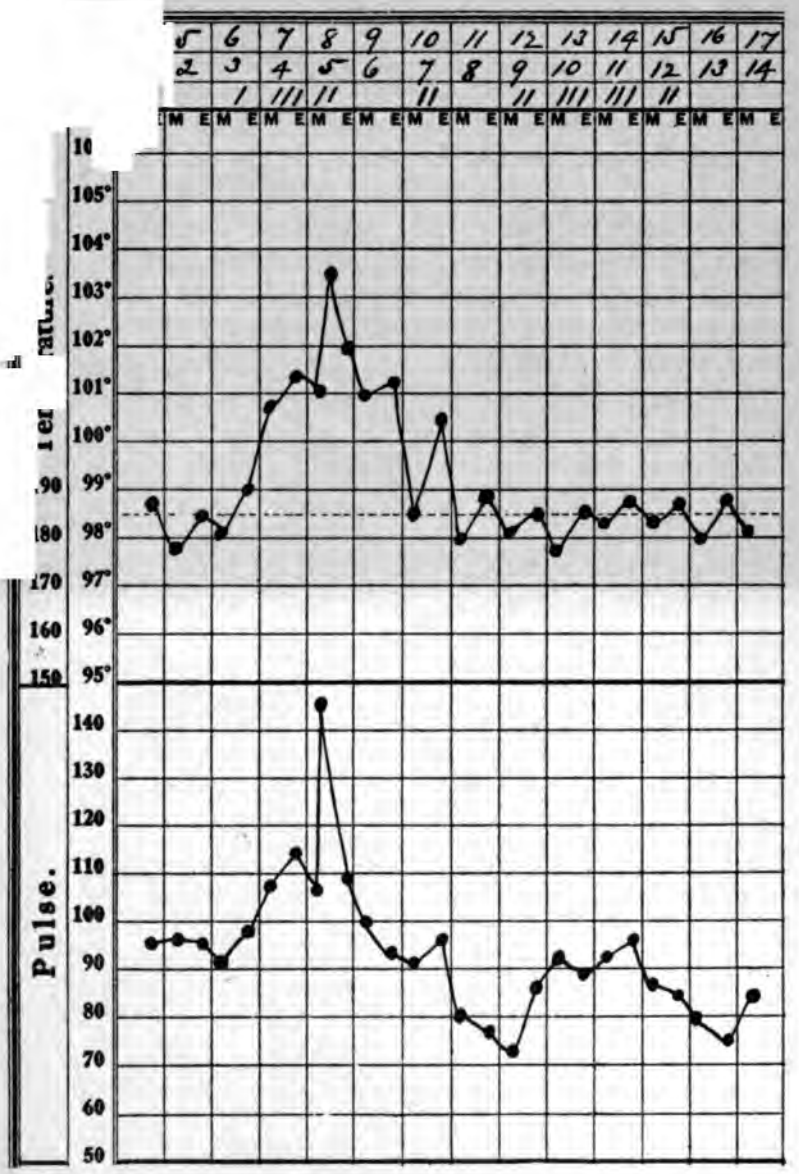
bowels did not move on those two days. From a normal morning temperature on the sixth day, the chart showed a rise to 102.5° F., a pulse of 110, and there was a chill.

Diagnosis. — It was a little late for genital infection to manifest itself, and there was nothing to cause suspicion of sepsis. On the other hand, when the patient was gone over in general examination an urticarial eruption was found on the chest, and in the absence of any other discoverable cause it was believed that this would explain the pyrexia.

Treatment and Result. — There was no obvious cause for this invasion: surely no unsuitable food had been given, and no irritating application used externally; possibly it was a manifestation of intestinal irritation from insufficient catharsis. The bowels were therefore more efficiently moved; and to alleviate the local burning, tingling, and itching a lotion of carbolic acid, lime water, and zinc oxide was freely used. On the morning of the third day the temperature returned to normal, and the lesions had disappeared.

CASE CXIV

mal multiparous labor, a hospital patient did
fourth day, when the morning temperature was
F., and the pulse 108. Investigation gave no evidence



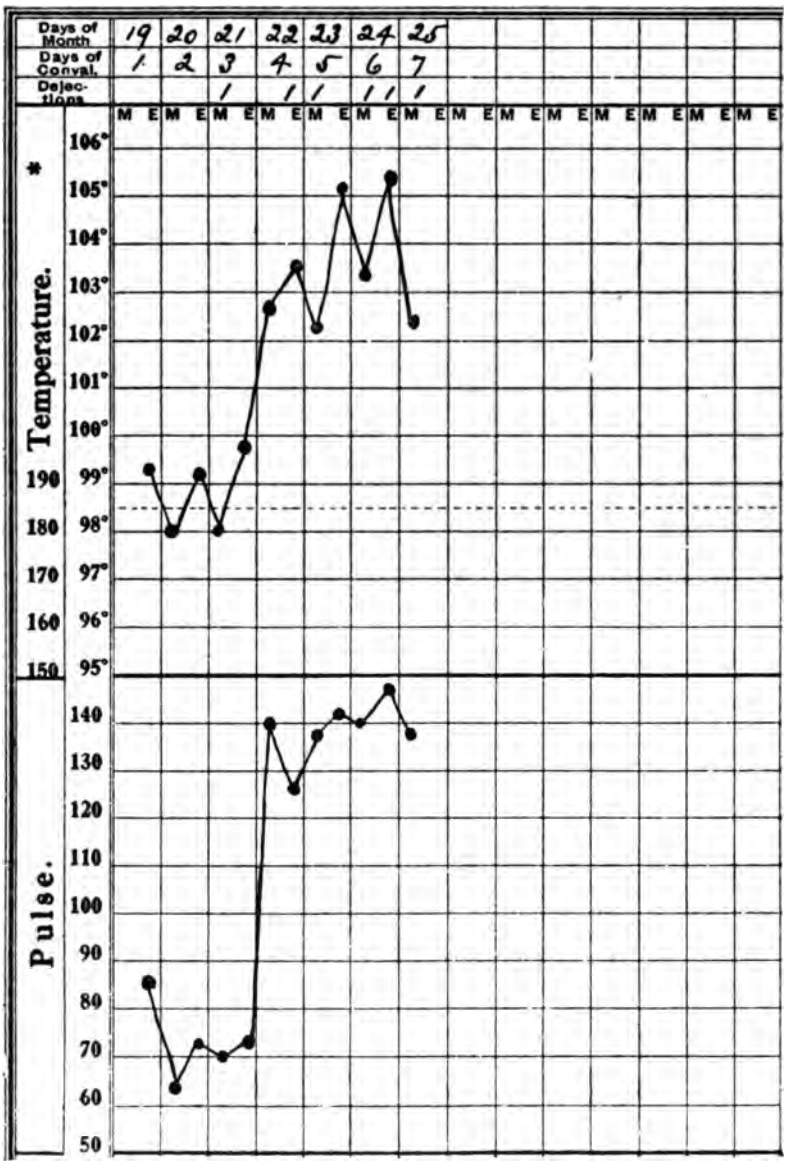
of genital infection, and there were no physical signs elsewhere. Pulse and temperature rose that evening, and on the fifth day there was a chill, the pulse going to 146, and the temperature to 103.5° F. The subjective symptoms then appeared in the form of headache, sore throat, general malaise, and aching all over.

Diagnosis. — Although the genital tract was not explored and no culture taken, there was no evidence, from either the lochia or the palpation of the abdomen, that there was an infection of the birth canal; and while sepsis could not be definitely excluded, it was thought safe to await further manifestations. There was no evidence of any of the exanthemata, or of infection of the breasts or urinary tract. There was nothing characteristic in the throat: heart and lungs were negative. On the other hand the symptom-group seemed explicable as one of the manifestations of *la grippe*, and this affection was made the presumptive diagnosis.

Treatment and Result. — The bowels were kept well open, a gargle was ordered for the throat, and ten grain doses of phenacetin were given. Two days later the morning temperature was normal, and after the same evening remained so: the subjective symptoms disappeared, and the presumptive diagnosis seemed to have been confirmed.

CASE CXV

A young primipara was delivered with low forceps, and was doing well, when on the morning of the fourth day the temperature rose to 102.8° F., and the pulse to 140.



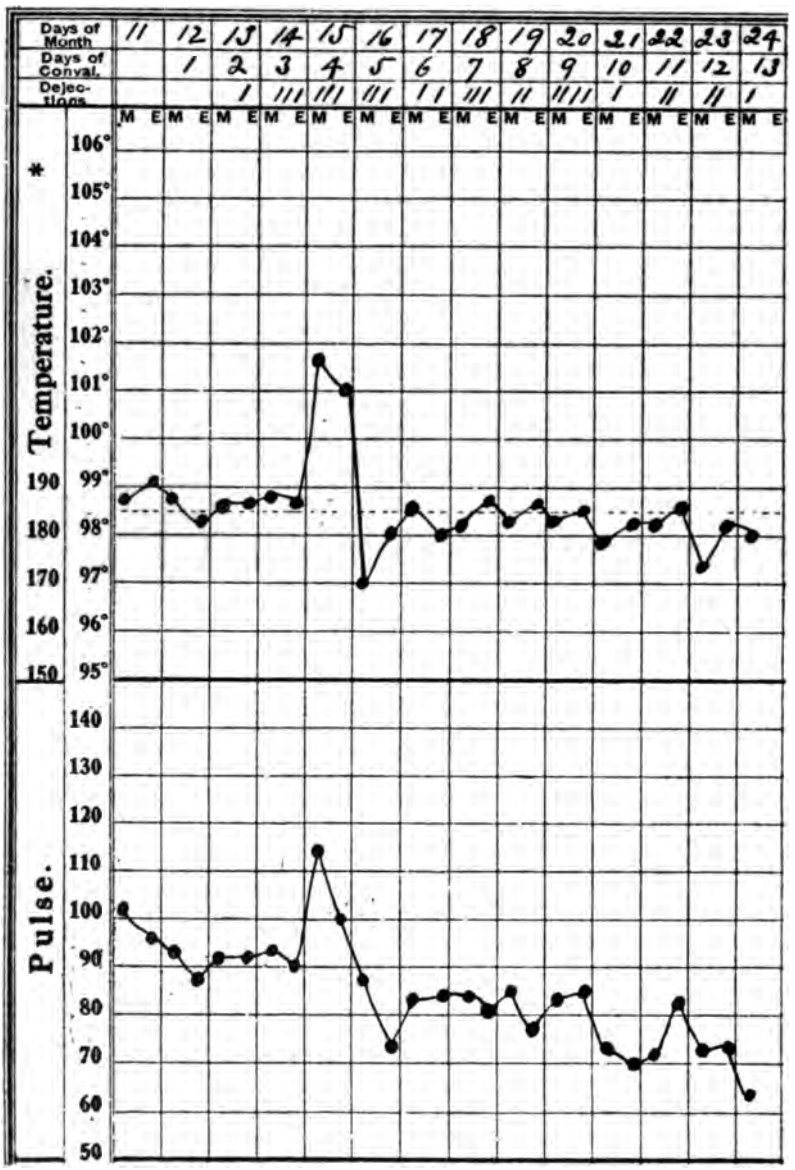
Diagnosis. — Genital infection was naturally the first thought; but the uterus was involuting well, was not unduly tender, and the lochial discharge seemed normal. Nothing had occurred to disturb the patient's equanimity. General physical examination disclosed only a reddened pharynx, and the young woman said her throat was sore: she was promptly isolated, and the case watched; the chart showed progressive pyrexia and pulse elevation. On the seventh day the strawberry tongue was first observed, and a diffuse rash on the anterior chest: the diagnosis of scarlatina, before suspected, then seemed obvious, and was confirmed by a noted consultant.

Treatment and Result. — The case was transferred to the South Department of the Boston City Hospital, where complete recovery took place.

Comment. — It is believed by some that pregnant women seldom get real scarlatina, and that especially in the puerperium the clinical manifestations are due to sepsis. While this may be true, there is no question that true scarlet fever does occur both in pregnancy and puerperal state. It is also believed by some authorities that pregnant women may harbor the latent scarlet fever infection until after delivery, when its characteristic signs first appear: in the case above cited, careful expert investigation resulted in the opinion that the infection did not take place in hospital. There is yet much to be learned on this subject.

CASE CXVI

A tertiipara with a flat pelvis was delivered of a breech by manual extraction and forceps to the after-coming head. At the morning visit on the fourth day it was noted that the temperature had risen to 101.8° F., from normal the evening



before, and the pulse had risen to 114: she had no subjective symptoms.

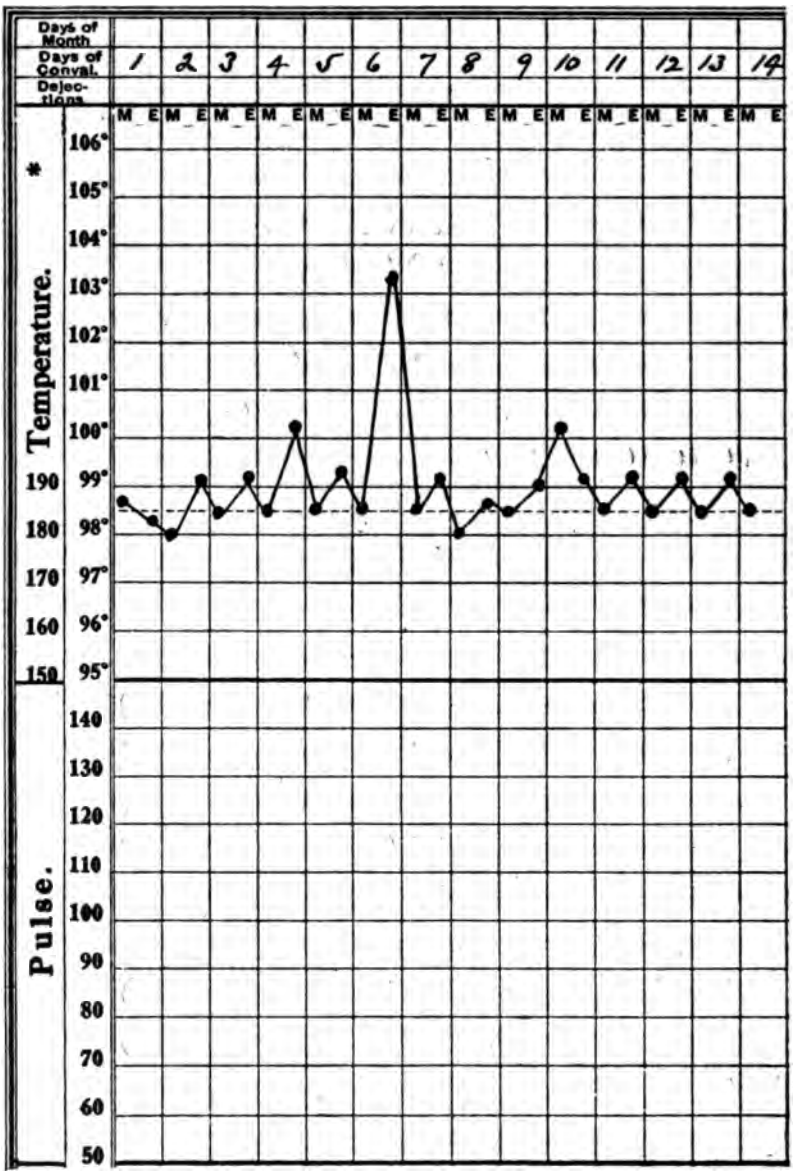
Diagnosis. — Careful examination failed to reveal any general physical cause of the fever. It was rather late in the convalescence for the first evidence of streptococcus genital invasion; and if a possible infection were due to some less virulent organism, the rise in temperature should have been more gradual: besides there was no uterine tenderness, and the lochia showed no abnormality. After the visit it was learned that contrary to the rule the woman's husband had been allowed to visit her in the evening of the third day, to give her some baby clothes; that there had been a " scene", and that the patient had seemed much wrought up afterwards. Meanwhile the temperature dropped to 101° F. on the evening of the fourth day, and was even subnormal the next morning.

Comment. — In the course of his experience the writer has seen not a few cases of fever in the puerperium, which could be designated only as hysterical, emotional, or psychical fever. Domestic infelicity has not infrequently been thought to have been the cause of fever and hysterical manifestations in the puerperal woman: the failure of the husband to kiss his wife goodbye; going off to the club, instead of sitting in the puerperal chamber; visiting the wife's room on returning home, after dining not wisely, but too well, — these and similar *contretemps*, to say nothing of the harsh word, have not seldom been the apparent cause of transitory fever. The disturbance of noisy, unruly, older children; worry over household affairs; fear of the loss of the baby, when former babies have succumbed in early infancy, are other causes. Fear of exposure, in illegitimacy; failure to receive an expected money-letter; dread of some operation, like opening a feared breast abscess; sudden bad, or even good, news; all these and many other causes may well so far disturb the puerpera's nervous system as to result in fever.

It is naturally humiliating to a conscientious obstetrician to overlook an infection, and wrongly to attribute a febrile reaction to some transitory, nerve disturbing, psychical cause; but it is also a pity to overlook such a cause, which is often obvious to a keen clinician, and unnecessarily to invade the genital tract in the search for a diagnosis.

CASE CXVII

A lady of twenty-nine was delivered of her first baby with low forceps: the perineum was torn an inch, and was repaired with three catgut sutures. Lactation was duly established,



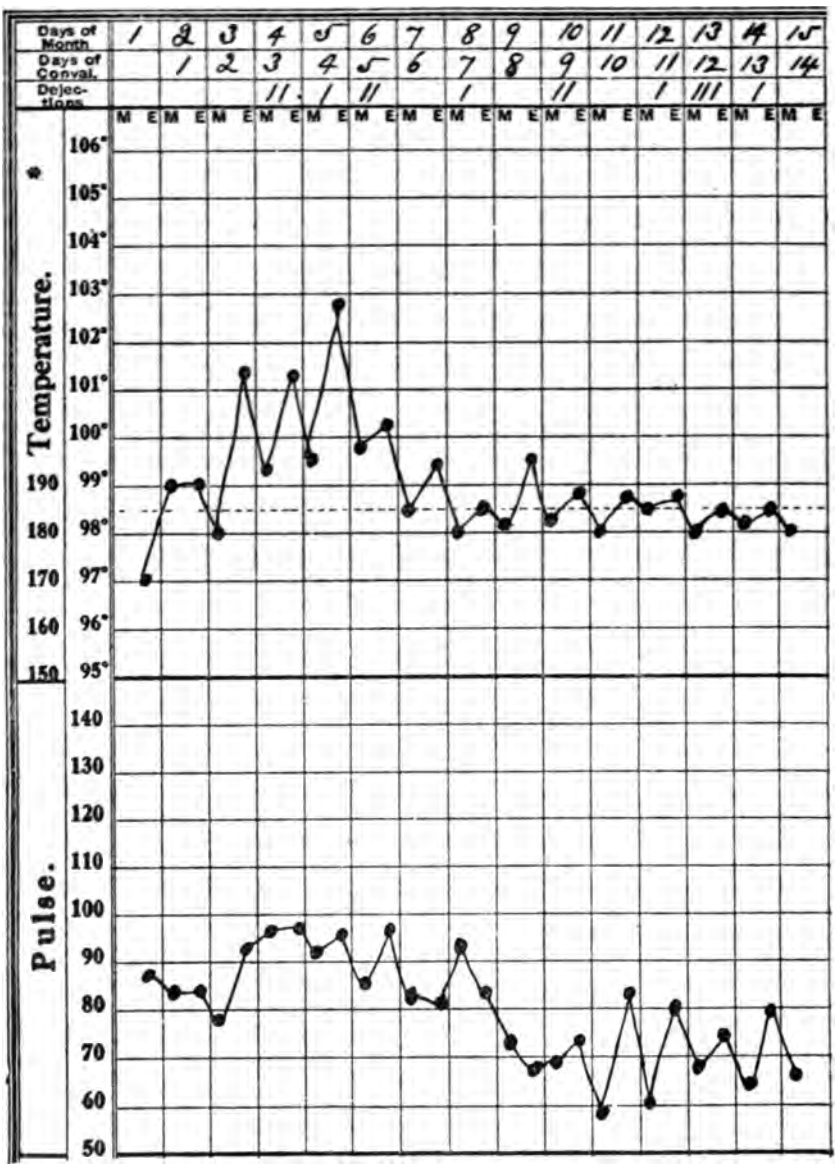
and both mother and baby were doing well until the afternoon of the sixth day. That morning the pulse was 76, and the temperature 98.4° F.; but in the afternoon the nurse telephoned that the lady had had a chill, and that the pulse and temperature had risen to 116 and 103.4° F., respectively.

Diagnosis. — The case had been handled with the highest regard for asepsis known to the writer, and he was loath to believe that the patient could have been infected by him: moreover, the nurse was conscientious and well trained. Besides, the chill and fever first appeared on the afternoon of the sixth day, and that is late for the first manifestation of puerperal infection. The lochia had been, and still were, quite normal; the uterus was not tender, and was involuting normally. A complete physical examination failed to reveal any cause for pyrexia. The nurse had reported that there had been a daily dejection; but in the absence of any other ascertained cause, it was suspected that the fever was due to a re-absorption toxæmia from the intestinal tract, and the rectum was explored. It was found that the lower bowel was packed with hard scybalous masses, and the use of the finger and a series of enemata were necessary to remove the large accumulation: next morning pulse and temperature were normal, and the puerperium proceeded to a normal conclusion.

Comment. — It was obvious that although the bowels had moved every day, as reported by the nurse, that they had not been efficiently emptied. Even if a woman's bowels move normally in health, when she is up and about her usual affairs, it is seldom that under the cessation of all exercise and the recumbency of the early puerperium, this eliminative function is adequately performed without artificial assistance: a mild cathartic at night and an enema in the morning are generally necessary. Of course there is a wide variety of satisfactory laxatives, from castor oil, calomel, and Epsom salts to cascara sagrada: it is generally wise to direct the use of whatever cathartic the patient has been accustomed to employ. The writer has a found a pill of aloin, strychnia, and belladonna very satisfactory for puerperal women.

CASE CXVIII

A novipara with a relatively small pelvis, a large baby, in O. L. A. position, and with ineffective pains, was delivered in hospital by internal podalic version, after a labor of thirty



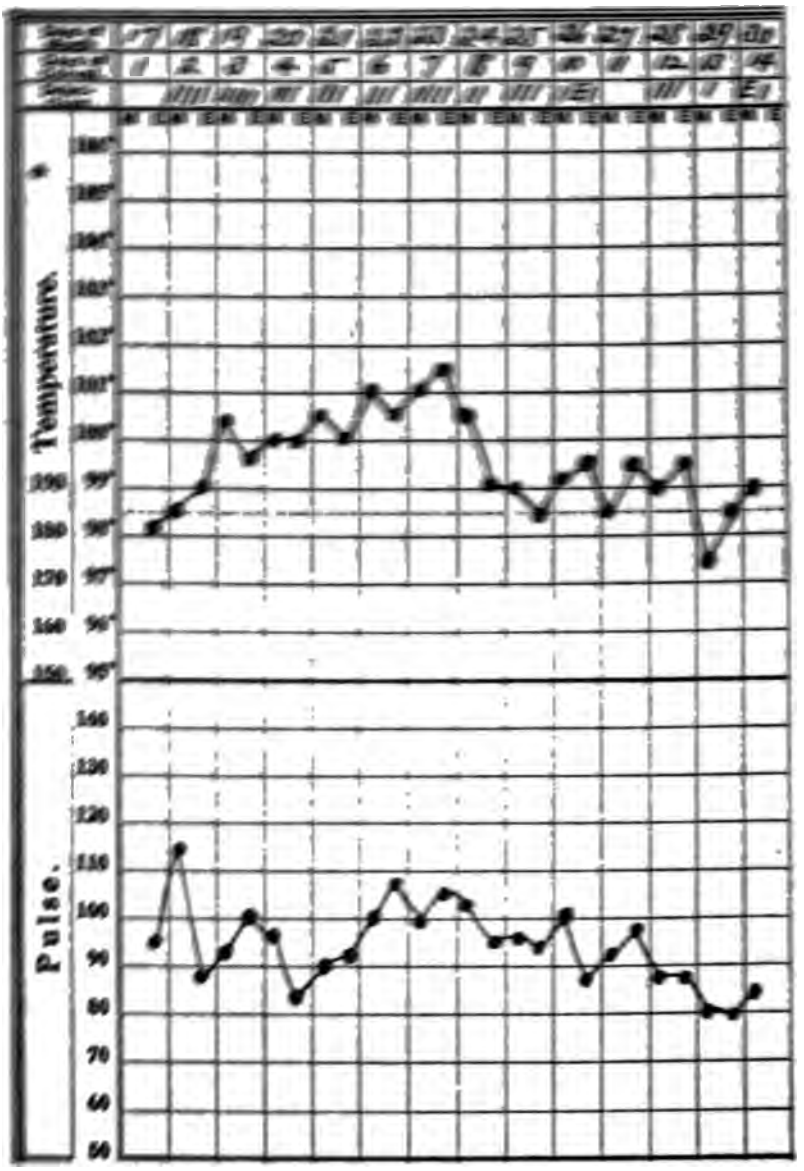
hours. Observation of her chart reveals a sudden rise of temperature and pulse on the evening of her second puerperal day. The house surgeon gave ounce doses of castor oil on the second, third, and fourth days, and the bowels should have been well evacuated; by the evening of the fourth day the bowels had moved three times freely, yet the temperature had risen to nearly 103° F.

Diagnosis. — Examination failed to show any evidence of infection or of general physical ailment. It seemed to the writer that in the absence of any other ascertainable cause, the pyrexia must be due to gastro-intestinal irritation from three successive daily ounce doses of castor oil, and the exhibition of this and all other cathartics was stopped. The next morning but one the temperature was normal, and a subsequently normal convalescence was completed on the fourteenth day.

Comment. — A ripe peach may be enjoyed and be harmless: six, on three successive days, may do harm. Adequate catharsis is one thing, hypercatharsis is another: fever may result from the gastro-intestinal irritation of hyper-catharsis, so it may result from peripheral nerve irritation elsewhere. The following case will also illustrate this fact.

CASE CXIX

An eclamptic paroxysm was delivered by the accouchement forcé, and, as shown by the chart, from the second day the temperature rose while the pulse fell. Uterus, lochia, and



general appearance gave no sign of infection: the bowels were very freely open. The temperature rose progressively; and on the sixth day the uterus was irrigated: yet on the following day the temperature was still higher.

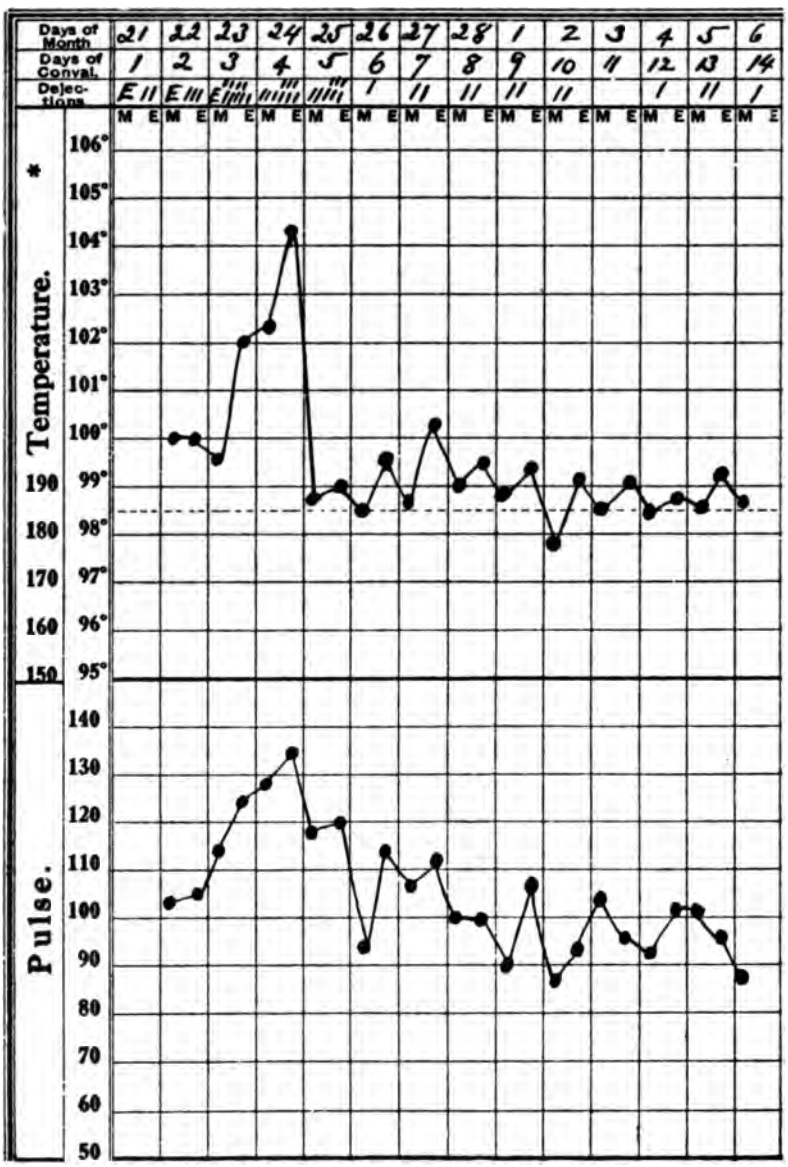
Diagnosis. — On the seventh day the patient said: "You are troubled because I have fever; stop my Epsom salts! I always have fever when I take that medicine."

Treatment and Result. — The further use of Epsom salts was stopped: the following evening the temperature was 99° F., and the following evening normal, and the further convalescence was without symptoms.

Comment. — Opinions may differ as to the cause of pyrexia in this case; but aside from the temperature there was nothing to suggest infection, and the temperature fell on removing the apparent cause of intestinal irritation.

CASE CXX

A young primigravida with a generally contracted flat rachitic pelvis and an obstetric conjugate of 6 cm. was delivered by Cæsarean section, and was apparently doing well,



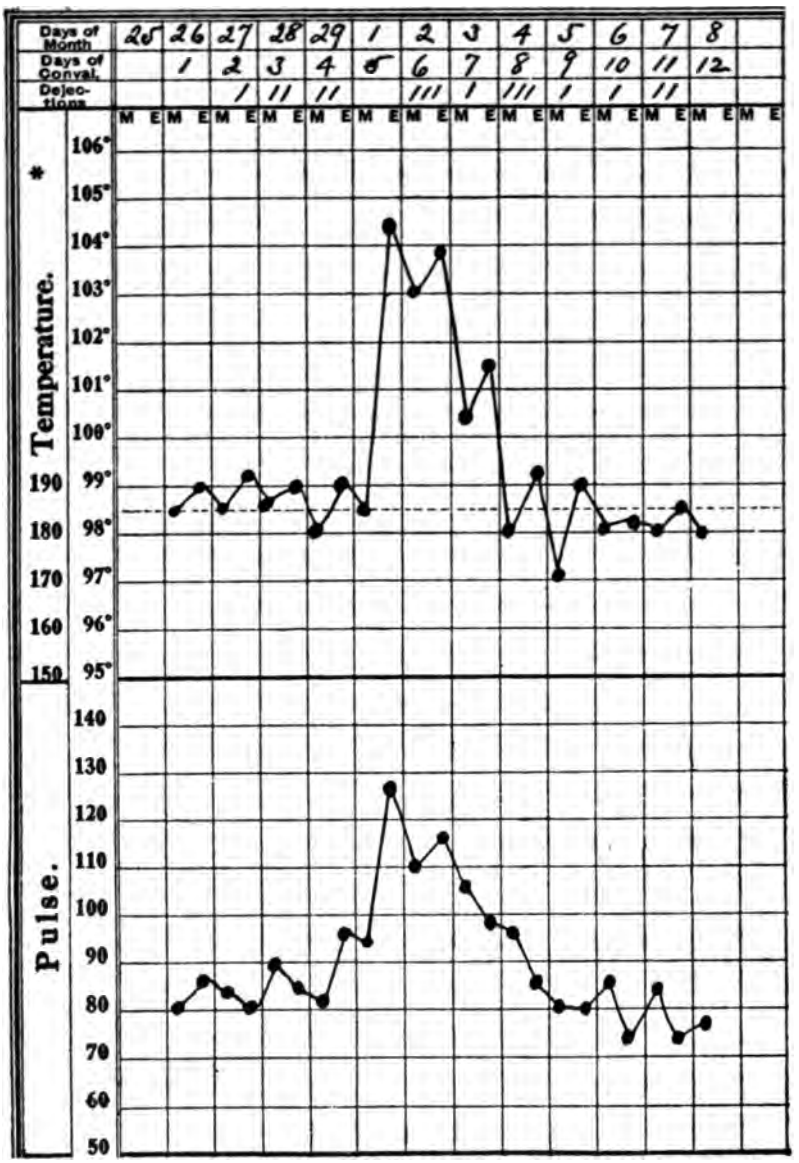
when on the evening of the third day, without evident cause, the temperature rose from 99.6° F. to 102° F., and the pulse to 124. Next morning, temperature and pulse had risen to 102.2° F. and 130 respectively. The wound looked all right, and there were no abdominal symptoms or signs; but in the absence of any other discovered cause it was feared that the uterus was infected.

Diagnosis. — That night pain was complained of, and a small tender mass found, in the left lower jaw, — apparently an alveolar abscess; meanwhile the evening temperature was 104.2° F. During the night the abscess ruptured spontaneously; and the next morning the temperature had dropped to 98.8° F.

Result. — The young woman was discharged, well, on the twenty-first day.

CASE CXXI

A sextigravida in the ninth month entered hospital on account of uterine hæmorrhage, and was found to have a partial placenta prævia. She was delivered, after manual dilatation, by internal podalic version and extraction, and



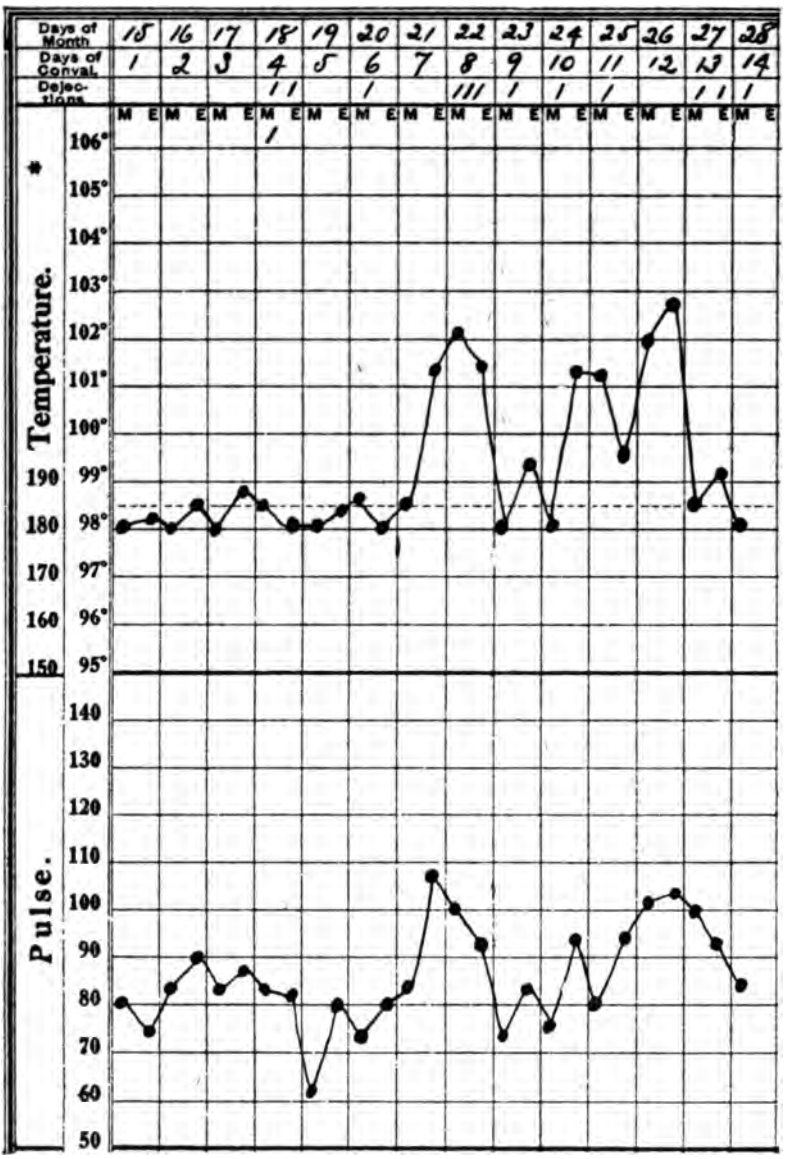
made an afebrile convalescence up to the morning of the fifth day. During this day the patient complained of severe pain in the right frontal and occipital regions, and in the right ear, and the evening temperature rose from normal to 104.4° F.

Diagnosis. — Infection is always to be feared in cases of placenta prævia, owing to the depressed resistance after blood loss; but the fifth day was late for the first manifestation, and moreover neither uterus nor lochia were apparently abnormal. The neuralgic pain from earache and sinusitis seemed an adequate explanation of the fever, and the genital tract was not explored.

Treatment and Result. — Hot applications and aspirin relieved the pain, the pulse and temperature gradually fell to normal by the third day thereafter, and the convalescence proceeded satisfactorily.

Case CXXII

A secundigravida had a normal labor, and made an afebrile convalescence until the seventh day, when the temperature rose to 101.2° F., and the pulse to 108. The house surgeon found a tender swelling in the right breast, and applied an



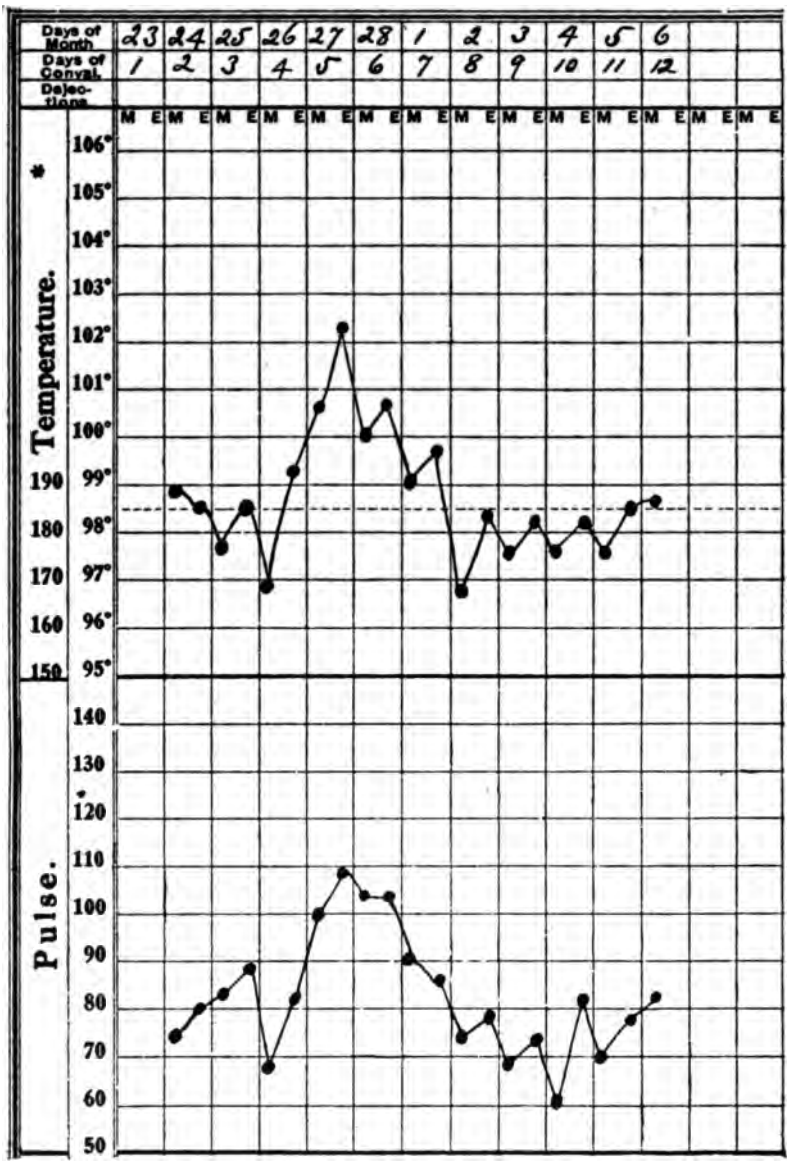
ice-bag. At the visit next morning the temperature was just above 102° F.; but the pulse had dropped to 100.

Diagnosis, Treatment, and Result. — The swollen, caked breast would surely account for the pyrexia; indeed, no other cause could be found: saline catharsis was ordered, and the ice-bag continued. The following morning the temperature was normal, and the swollen breast had subsided; but on the tenth day the fever again reached 101.2° F., and a tender mass was found in the left breast: this was treated also with catharsis and ice-bag, and on the thirteenth day the temperature was normal again.

Comment. — When the first appearance of fever is after the fifth day, and especially after the seventh, it is highly improbable that the cause is infection of the genital tract; then, generally, the responsible doctor may feel that he is out of the woods on this score, and may expect to find the cause of the pyrexia, unless it be the breasts, in some complication or infection of non-puerperal origin.

CASE CXXIII

After a normal labor, a primipuerpera had a progressive rise in pulse and temperature, beginning on the fourth day. Nothing could be found to account for it, as to uterus, lochia,



or general condition; but a tender mass was discovered in the right breast.

A supporting breast-binder and an ice-bag were applied, and saline catharsis employed. The chart shows the gradual decline of the pyrexia.

Comment. — In a large proportion of cases of fever in the puerperium the cause is to be found in hyperengorgement or actual inflammation of the breast: in hospital routine work, the breast is usually the first thing considered on a rise of temperature. It should be a rule of practice to investigate the cause of every puerperal temperature above 99.5° F.; if this is done, timely diagnosis can often be made of beginning mastitis, and treatment applied which may cut short what might develop later into breast abscess.

Case CXXIV

A young married woman of twenty-five came to the hospital to find out whether she was pregnant, having missed three consecutive periods; she was perfectly well and had no complaint.

Diagnosis. — On making a bimanual examination to ascertain the size of the uterus it was discovered that the vagina was double, the septum running the entire length: at the distal end of the passage on the right was a normal, somewhat softened, cervix; the passage on the left terminated in a cul-de-sac. It was not difficult to determine that pregnancy had advanced to between three and four months. The young woman had never been conscious of the vaginal partition.

Treatment and Result. — No treatment was advised or thought then desirable; but the young woman was instructed to enter hospital for her labor. In due time she had a normal and uneventful delivery: the septum caused no obstruction, and was not torn through as the head descended.

Comment. — In some cases the septum, if complete, will delay cervical dilatation or hinder the fœtal descent, and necessitate resection with scissors. In another case, seen in consultation, the septum was discovered by accident when pregnancy was three or four months advanced; somewhat later this patient miscarried, but again became pregnant and went to term. Her physician later informed me that the septum caused no apparent dystocia, but was partly torn away. Some years ago a prostitute entered the writer's hospital service and was found to have a double uterus as well as double vagina; of the latter she was aware, and seemed quite proud of it, at all events she urgently requested that the septum be not removed. In this case there was gonorrhœal infection of one vagina, for which she was treated: the other did not become infected while she was under observation.

CASE CXXV

A young wife of twenty-three had been married ten months, and had not become pregnant; her general health was good, she menstruated regularly for five or six days without pain, her husband was well as far as she knew, and she would like to know why she did not conceive.

Diagnosis. — Pelvic examination could show only one possible cause of infertility, and that was a congenitally small cervix and a so-called pin-hole os. Of course it was entirely uncertain whether the partial atresia was the real cause; the husband might be at fault, or, what seemed quite probable, there might be a hypo-development of the ovaries with absent or very infrequent ovulation.

Treatment and Result. — It was explained to the young woman that the true cause of her failure to conceive was not clear; that her case would have to be observed; that assuming her husband's potency, the cause might be ovarian inactivity, or possibly the small cervical canal. It was suggested that gradual dilatation of the cervix might be tried, and that this might lead to the desired result. Accordingly the patient came for successive dilatations, each month, just after the menstrual period and before coitus: the graduated dilators of Hanks were used, and the canal soon passed Peaslee's sound without pain. She menstruated October 17 to 22, and was dilated for the seventh time on October 24. On November 21 she reported that her period was one week overdue, and of course the uterus was not invaded. On July 13 following, she had her first labor under the management of her family physician: unfortunately there was a prolapse of the funis, and the child was stillborn; unfortunately also she suffered a vulvo-vaginal abscess soon after her puerperium. But in spite of the probable ætiology of this infection, the tubes, or one of them, must have escaped; for the young woman bore a living baby three and a half years later, and another one subsequently.

Comment. — It should be realized that the treatment adopted in this case is by no means certain to be followed by the desired result. Indeed, no assurance ought ever to be

given a patient that her sterility can be treated successfully; although the more certain the diagnosis of cause, the more definite can be the prognosis. As mentioned elsewhere, imperfect development of the cervix is very often concomitant with hypo-development of the ovaries, a condition which cannot be determined by touch alone. However, in cases like the above, uncertain as they may be as to diagnosis and prognosis, it is worth while to try to promote fertility by the method followed, provided only it is carried out with due care to avoid infection.

CASE CXXVI

A modest young woman of twenty-three, married for two months, sought medical counsel on account of difficulty in coitus. From her statement it appeared that complete penetration had never been possible. Her general health had always been excellent, her catamenia regular and painless, and she had never been aware of any genital anomaly.

Diagnosis. — Examination showed the external genitalia normal. The hymen was ruptured, and the introitus stretched sufficiently to admit two fingers with ease. At a depth of about two inches, however, there was encountered a smooth, annular constriction of the vagina, which at first resisted the passage of a single finger. With some difficulty and no little pain the forefinger was finally forced through this constriction and entered a saccular dilation of the upper vagina, in which was felt the small normal cervix uteri. The uterus and appendages were palpable and presented no anomaly. In the absence of any history or evidence of previous inflammatory process, the condition was evidently one of congenital stricture or stenosis of the vagina.

Treatment. — Operative treatment in such cases, with excision of the stenotic ring and subsequent vaginal plastic, is usually fruitless, since the ensuing cicatricial contraction often causes recurrence of as bad a stricture as before, if not worse. Moreover, it is generally unnecessary. For even in cases where the stenosis is so tight as to interfere with or prevent proper coitus, a process of gradual, mechanical dilatation will usually stretch a non-cicatricial constricting ring sufficiently to permit coitus, which thereafter will keep the stricture open. If conception and labor then occur, the condition is likely to become permanently cured. In the case above cited, it was found that the smallest of a set of graduated rectal bougies, well lubricated, could just be passed through the constriction. The patient, therefore, was instructed in the passage of this instrument, which was given her with directions to use it twice daily for three days. At her return, it was found that the next size of bougie could be passed. This she was directed to employ similarly. Thus

she was given each of the bougies in turn, returning every third day for observation until the largest calibre of bougie could readily be passed through the stricture. The patient found that satisfactory and complete coitus was then possible. Two months later she returned for inspection, having missed one period. The constriction was then easily passable by two fingers. The cervix was soft, the uterus moderately enlarged and globular. A presumptive diagnosis of pregnancy was made. The patient subsequently delivered herself at term of a seven-pound baby, and examination after the puerperium showed no remaining trace of the vaginal constriction.

Comment. — Sometimes these circular atresias of the vagina, not being sufficiently complete to prevent coitus, are not discovered until labor, and perhaps not then. If the membranes do not rupture prematurely the stricture may be dilated by the hydrostatic wedge; or the descending head may easily stretch or tear it. But the discovery of the annular atresia for the first time during labor may puzzle or deceive the inexperienced. A consultation was sought by a young physician to solve this problem presented to him: a primipara whom he was attending was apparently progressing normally, and at his first vaginal examination he found the cervix obliterated and the os dilated, as he supposed, to a lumen of an inch. The pains continued of good quality, finally the membranes ruptured, and he examined again; to his surprise there was no change in the os, and the presenting head had not descended: second-stage pains supervened, and still no further dilatation, and still no descent. When the writer saw the case he found an annular atresia high in the vagina, which would barely permit the passage of two fingers; there was a small chamber in the vaginal vault thus partitioned off. The cervix was found obliterated, the os fully dilated, and then it was discovered why the presenting part had not descended, — it was a hydrocephalic head too large for engagement. The stricture was dilated with the fingers, craniotomy was performed, and delivery effected with the cranioclast.

CASE CXXVII

A young wife had had a two months abortion, of unknown ætiology; a full-term, easy labor the following year; the next following year a premature labor at seven months: she had not menstruated since. Seven and a half months later, while sitting in the house of a friend, she began to flow profusely (fully a quart of blood was said to have been collected), finally fainted, and was seen by a physician, who advised removal to the Lying-in Hospital.

Diagnosis and Treatment. — On entrance the patient was in fair condition, pulse 105, color good. The cervix was not wholly taken up, the external os uteri was dilated to an inch in diameter. The presenting head was high, O. D. P. The abdomen was large and broad for that period of pregnancy (six to seven months). There was a large and well-marked median sulcus, suggesting twin pregnancy. During a uterine contraction this sulcus became more marked and could be distinctly felt: beginning just below the umbilicus it extended upward, becoming broader and deeper, and dividing the fundus uteri into two distinct and nearly equal parts. The part on the right was firm and resistant: in it the outline of the fœtus could be distinctly palpated, and the fœtal heart could be heard over it. The left cornu was less resistant; no part of the fœtus could be felt in it; nor could the fœtal heart be heard there, but a loud placental bruit was heard over this area. (Figure 1.) During a contraction both halves of the uterus seemed to harden equally; but the left half stood out with greater prominence.

Four hours after entrance dilatation was complete, the membranes ruptured, and a large amount of liquor amnii escaped. Five minutes later the baby was born, and was followed by some large, dark clots. The baby weighed only three and three-quarters pounds, and lived but six hours.

After the birth of the baby abdominal palpation showed on the left a mass which had the size and feeling of a normal uterus during the third stage. To the right of this, and closely connected with it, was a smaller mass, presumably that portion of the uterus which had contained the child. (Figure 2.)

Figure 1

Figure 2
PREGNANCY IN BICORNUATE UTERUS

Figure 3

At the end of forty minutes pressure was made on the left, or larger part of the uterus and the placenta was easily expressed. After the birth of the placenta, the left cornu of the uterus became of an equal size with the right: the division between the two cornua was very distinct, and both were well contracted. (Figure 3.) There was no post-partum bleeding. The amniotic sac was partly divided into two, obviously by the sulcus between the cornua.

During the puerperium the bicornuate condition was easily appreciable to the touch. On the fourteenth day the uterus was explored with a sound: the sound would pass only a short distance in the median line, but deviated towards one side or the other. The depth of the right cornu was four inches; that of the left, four inches and a half.

Comment. — Carefully observed cases of pregnancy and labor in bicornuate uteri are rare; and this case has an added point of interest in the ante-partum hæmorrhage. Whence came the hæmorrhage? The placenta was not prævia, neither was it low seated, partly in the lower segment. It must have come from a partial separation of the placenta from some cause not evident. It is taught that a normally seated placenta may be detached by uterine contractions; but this woman had had no labor pains before the hæmorrhage. Of course in most such cases of ante-partum hæmorrhage, when the placenta is normally seated, the placental separation is caused by trauma, — falls, blows, kicks; there was, however, no history of trauma in this case. The large dark clots immediately following the birth of the child would point to a probability that there was some internal concealed hæmorrhage before the open one: perhaps the bleeding began after a forgotten bump against a table or open door; perhaps a small disruption of the placenta occurred as a result of ungentle coitus the night before, and a small, concealed hæmorrhage suddenly became a large, open one. This would be an adequate explanation; for there is no question that separation of the placenta and premature rupture of the membranes may, and often do, result from coitus in the latter months of pregnancy.

Case CXXVIII

A clergyman's wife of thirty-five, who had borne three children, sought advice for backache, leucorrhœa, and general ill health. Defæcation was painful at the anus. She had no appetite, and felt run down.

Diagnosis. — The uterus was found to be somewhat prolapsed, and retroverted to the second degree; the left ovary was also prolapsed. The cervix was torn bilaterally: the lips were not everted, because the cervix lay in the long axis of the vagina; but they were much eroded, especially the posterior lip, obviously by the irritating uterine discharge. There was much general subacute tenderness, the sequel of an antecedent pelvic peritonitis; there were evidently some pelvic adhesions which prevented a complete reposition of the uterus bimanually. About the anus were two hæmorrhoids, which explained the pain on defæcation. Inquiry elicited the statement that the catamenia were regular; but the flow lasted eight days, and there was a dull pain in the back all the while.

Comment. — It was clear that to restore this lady to health, attention must be paid to her general condition, and that she must be treated medically as well as surgically. Without going into particulars it may be said that during the progress of the case she received advice as to rest, diet, tonics, and general regimen. As regards the pelvic conditions, two methods of procedure were open to choice. Undoubtedly the quickest way, after a curettage and the necessary plastic surgery, was to open the abdomen, free the uterus and left ovary of adhesions, deal with the appendages, if found necessary, and then to maintain the uterus in position by a round ligament or other suspension operation; but there was no reason to suspect any disease of tubes or ovaries, and the lady much preferred not to have the abdomen opened unless it were absolutely necessary. The other way, which would take more time, was to do the plastic work after the patient was duly prepared, locally and generally, and then to replace and sustain the uterus by gradual reposition and pessary. The latter method was chosen.

Treatment and Result. — In view of the pelvic tenderness the patient received ichthyol and glycerine wool tampons at convenient intervals of from five to seven days, with intervening bi-daily hot water douches: the eroded cervix was painted with Churchill's tincture of iodine whenever a tampon was applied. In two months and a half the patient had markedly improved locally and generally, and all the while had been able to continue her family duties and meet the demands generally made on a minister's wife. Curettage and trachelorrhaphy were then performed, and the hæmorrhoids removed. The uterus could not with safety be replaced fully; but a soft rubber lever pessary was comfortably worn and held the uterus in a much improved position. The patient then went to the country for the summer. In October she reported that she had had a good summer, and except for occasional backaches was without symptoms. The uterus was comfortably held by the soft pessary; but the left ovary was still prolapsed and adherent, and evidently kept the uterus from complete reposition: the ovary, however, caused no symptoms. At Christmas time she reported herself as very well. The following April she was still very well; but the uterus was still held from its normal position by the adherent ovary.

This patient did not appear again until thirteen months later. It was then found that the uterus was in normal position and the ovary was free. She was very well, had normal catamenia, and had no symptoms whatever. A new, and somewhat longer, soft lever pessary was adjusted. Six months later, a hard rubber lever pessary was substituted for the soft one, for reasons which will be stated later. In March of the following year the experiment was tried of removing the pessary, to see if the uterus would remain in position without it; but it again retroverted and the pessary was replaced. Three months later the lady reported that she was still perfectly well and able to do what she wanted to: the uterus was in normal position. Ten months later the experiment was again tried of giving up the pessary; and by this time the uterine supports had so far recovered their tone that the uterus retained its normal place without adventitious aid.

Four years afterwards the lady called to say that she felt perfectly well, and that she thought she was four months pregnant: examination showed this to be the fact.

Comment. — This case is given in detail to show what may be done, under the conditions stated, for a patient who prefers not to undergo an abdominal operation: even though the risk be small, no one can deny that there *are* risks, and there are those who prefer not to take them. To be sure seven months elapsed before the patient considered herself well, and three years before the pessary could be dispensed with; but all these three years the patient was well, and was able to lead her life. To complete her happiness, she was able to conceive another child. On the whole, perhaps the patient's choice of the slow pessary treatment, instead of an abdominal operation, was a wise one.

The elastic soft rubber lever pessary is of especial value in cases like the one above given: between this and the hard rubber pessary there is as much difference as between a tip-cart and a buckboard. The soft pessary can be worn with comfort when the rigid pessary would hurt: furthermore, the spring-like elasticity exercises a constant gentle tension on adhesion-bands, and very often will thus cause these bands to attenuate and give way. The only objection to these soft rubber pessaries is that they do not keep clean as long and to some extent absorb vaginal discharges, so that they have to be renewed from time to time; but after all tenderness has disappeared, and the uterus has been brought to its normal place, the hard rubber pessary may be substituted.

When for any reason pessaries cannot be made to serve, or when patients refuse pessary treatment, of course a choice may be made of one of the many round ligament operations or of ventral suspension; but when other treatment is possible it seems to the writer wise to avoid suspensory operations on the still parous uterus. It is well, too, to remember that retro-displacements can often be cured with pessaries and these useful appliances then dispensed with. But it is not a serious affliction, if a pessary has to be worn indefinitely; there are many who wear plates of false teeth with equanimity. And if a woman is young, and subsequently becomes

pregnant, careful management in the puerperium may prevent a recurrence of the displacement. A young woman of twenty-five had borne two children in her three and a half years of wifehood, and when she came for the relief of backache it was found that she had a retroverted uterus: the uterus was replaced bimanually, and a pessary fitted. This relieved the backache and the dull menstrual pain, and in three months she became pregnant. She wore the pessary until she was fifteen weeks along, when it could safely be removed. This third baby was born in February, 1905: a fourth was born in October, 1907: a fifth in January, 1909; and she was well all the time. In February, 1911, she was found to be four months along in her sixth pregnancy: she then had some trouble with constipation and needed some general medical treatment; but there was no trouble in the pelvis. It is hard to believe that this young woman would have been better off, if her retroverted uterus had been treated by abdominal operation nine years before.

CASE CXXIX

Early in his professional life the writer was called to the Boston Lying-in Hospital to deliver a young primipara on account of uterine inertia in the second stage. The delivery was not worthy of remark; but shortly thereafter, before the funis was cut, the writer was amazed to see the large, uncontracted uterus roll out from the vagina into his fortunately clean hands, and realized that he had to deal with an acute inversion.

Diagnosis. — The large, soft, red tumor required no differentiation; it could be nothing but the uterus, and the placenta was still completely attached to it. A large fibroid, while it might look much the same, would be firmer and solid; besides, were it to be a possible pedunculated fibroid, the uterus would be palpable in the hypogastrium, and in the present case there was no uterus where it ought to be. The patient gave evidence of moderate shock.

Treatment and Result. — Following the rule, in view of the fact that there was no hæmorrhage (indeed, there could not be with the placenta still wholly attached), the uterus was immediately re-inverted and restored by taxis to the abdominal cavity: had the placenta been partly detached, with attendant bleeding, it would have been peeled off before uterine replacement. Once replaced the uterus was made to contract and retract with massage and application of ice; in due time the placenta separated and was expressed *during a contraction*, and a hot intra-uterine irrigation was given. The patient made a good convalescence, and seemed none the worse for her very unusual experience.

Comment. — What was the cause of this acute inversion? The funis was neither absolutely nor relatively short; the labor was not precipitate, indeed the forceps extraction was slowly and carefully done; the writer did not commit the obstetrical crime of pulling on the funis to deliver the placenta: what had happened was that an uninstructed pupil-nurse had prematurely attempted to express the placenta from the flabby uterus, instead of waiting for contraction and adequate retraction, with the result that she turned the uterus wrong side out.

Chronic inversion is now seldom met with, indeed, acute inversion is now extremely rare. A chronic inversion can be mistaken only for a pedunculated fibro-myoma, and the differential diagnosis is easily made by bimanual palpation, aided when necessary with the uterine sound. The treatment of chronic inversion has already been referred to.

CASE CXXX

A young married woman sought advice for dysmenorrhœa. Her general health was excellent, except for constipation. Her catamenia had been normal and painless from their appearance at thirteen until she was nineteen years old. At that age she sustained a fall from a hammock, striking with a great jar in a sitting posture; and immediately, at the next period after the accident, severe dysmenorrhœa began, keeping her in bed for two days each month. She married at twenty-one, and in her two years of wedded life had not become pregnant, though she was desirous of children. Her catamenia continued regular, but the dysmenorrhœa remained constant and severe.

Diagnosis. — Physical examination showed a plump, well-developed young woman, apparently perfectly normal in every way except for a completely retroverted, sensitive uterus, which could not be replaced by ordinary taxis. The cervix and cervical canal were small, the latter would not admit a Simpson's sound. In view of the definite history, without motive for deception, of early normal menstrual function followed by immediate onset of dysmenorrhœa after violent fall in a sitting posture, it seemed fair to conclude that the retroversion was not congenital, but was due to the trauma, and was the cause of the dysmenorrhœa. The husband had been examined by an expert genito-urinary surgeon and found free from venereal disease and not sterile. In view of the patient's desire for pregnancy, she was therefore advised to have the cervix dilated, the uterus curetted and replaced, in the hope of relieving simultaneously the sterility and the dysmenorrhœa.

Treatment. — The advice was accepted, and under an anæsthetic the dilated and curetted uterus was easily replaced, and held in normal position with a hard rubber pessary. The patient made an uneventful convalescence, and left the hospital in eight days, still wearing the pessary.

Result. — Her next period, two weeks later, was absolutely painless, so much so that, whereas of recent years she had had twenty-four hours of malaise before the beginning of the flow,

she now had no warning until the flow was established. The patient continued to wear the pessary for four months, returning after each period to have it cleaned and replaced. The periods continued painless. The patient did not become pregnant. At the fourth month, the pessary was removed, in the hope that the uterus would now remain in normal position without it. At the next period the dysmenorrhœa recurred, and on examination the uterus was again found completely retroverted: the patient was profoundly discouraged.

Revised Diagnosis. — On examining the abdomen in a standing posture without clothing it was now observed for the first time that there was slight hollowness in the epigastrium, and abnormal fullness below the umbilicus. Percussion showed the lower border of the stomach at the umbilicus, the loop of the transverse colon descending nearly to the symphysis pubis. This condition was exaggerated when the patient put on her corset, which was of improper type, and which she wore tightly laced above and loose below. The diagnosis of splanchnoptosis was obvious.

Treatment of the Ptosis and Result. — Without further treatment of the uterus the patient was provided with a proper corset and was taught how to apply and wear it. Her next period was absolutely painless, and the uterus was found in normal anterior position. Since that time, there has been no recurrence of the dysmenorrhœa, the uterus has remained in perfect position, and there has been an almost complete spontaneous disappearance of the constipation.

Comment. — In this case, the uterine retroversion was doubtless originally caused, or increased in degree, by the fall and maintained by the gradually increasing splanchnoptosis. Failure initially to recognize and relieve this ptosis, led to the recurrence of the retroversion as soon as the pessary was removed. Correction of the ptosis allowed the uterus to return to normal position, and relieved the constipation, without other treatment.

The importance of ptosis in complicating or simulating pelvic disease can hardly be over-estimated. It is primarily due to the improper forms of corset worn by many women,

which force the viscera down towards the pelvis and hold them there. A proper corset should lace in front. It should be applied while the patient is lying down with the hips slightly elevated, and should be laced from below upwards, very tight at the bottom and progressively looser towards the top. The value of such a corset in correcting other forms of ptosis is illustrated by the following case:

A recently married young woman sought advice on account of a pain in her left side, which she had never had prior to her bridal. She was a reader of eugenic and sex-hygiene literature, and suspected her honest husband of having infected her with venereal disease. Examination showed her pelvic viscera absolutely normal. Her pain was traced to the left flank, where a sensitive, prolapsed kidney was easily felt. With her trousseau it was found that she had purchased a particularly tight and villainous corset, of the type lacing in the back, by vigorous application of which during her honeymoon she had succeeded in dislocating her kidney. A proper corset, with instructions how to wear it, promptly replaced and supported the kidney and entirely relieved her symptoms. No more was said of her husband's supposed dereliction.

In multiparae, ptosis is particularly likely to be further complicated by sacro-iliac strain, and the latter in turn to be caused by flat-foot.

A mother of seven children came for womb-trouble, complaining of backache, constipation, and nearly every other symptom common to women. She had sustained surprisingly little trauma of labor. Her uterus was only slightly retroverted. She had a hollow epigastrium, full, pendulous hypogastrium, relaxed abdominal wall, tenderness over the left sacro-iliac joint, limitation of motions of the spine, and marked left flat-foot. She wore the corset of a typical Victorian matron. A proper corset, properly applied, corrected the ptosis and splinted the pelvis so as to relieve the sacro-iliac pain. The flat-foot was soon relieved by substituting for her narrow-toed, high-heeled boot, a broad-toed, low-heeled shoe, with a temporary Thomas sole. Within a month all her symptoms had vanished.

It is by no means true that all pelvic ailments can thus simply be cured by proper corseting. But it is true that the majority of women have ptosis of various forms and grades. Few women wearing an improper corset are not benefited by changing to a proper one. Hence, inspection of the corset should be part of the gynæcological examination. Any patient having ptosis will be benefited by its relief, and unrecognized or untreated ptosis is probably one of the commonest causes of gynæcological failure.

CASE CXXXI

A modest and perturbed young woman, recently married, came in great mental distress to her physician on account of an eruption which had appeared the day before on her genitalia. She stated that she had hitherto entertained the highest confidence in her husband, but that now her life was ruined, since this venereal disease, which she could have caught only from him, proved that he was as bad as all other men. It appeared from investigation that the young woman had read something of so-called sex-hygiene literature, and had witnessed a performance of " Damaged Goods ".

Diagnosis. — General physical examination of the patient was entirely normal. Local examination showed a multiple vesicular eruption on the left labium majus; the vesicles, about twenty in number, were small, unilocular, with a slightly infiltrated base, and one which was accidently ruptured contained a single drop of clear serous fluid: there were two similar vesicles on the right labium majus. Further pelvic examination was normal. The inguinal nodes were not enlarged or tender.

The lesions being neither ulcerative nor syphilitic in character could belong only to some one of the ordinary dermatoses. There was no history of the use of any medicated or hot douche which might have burned or irritated the skin. The vesicular nature of the eruption marked it as of herpetic type, and a diagnosis was made of herpes progenitalis.

Treatment and Result. — The young woman was confidently reassured and told that her disease was entirely non-venereal in origin. She was given a prescription for a boric acid dusting-powder, which she was directed to apply to the parts frequently, coitus was temporarily interdicted, and she went away in a state of obvious, though not yet complete, mental relief. When she returned, four days later, the vesicles had all dried and were fast disappearing. She complained however, of a pain in her left side. Examination showed a few small similar vesicles in the left mid-axillary region, about the level of the seventh and eighth ribs. The patient subsequently went through a typical mild attack of herpes zoster. The genital region was well within a few days.

Comment. — Herpes progenitalis is rare. It may be unilateral or bilateral, may occur idiopathically, or, as in the present case, in conjunction with, or as an early manifestation of, herpes zoster. It should be remembered that this and other ordinary dermatoses, notably eczema, furunculosis, impetigo, psoriasis, scabies, and urticaria, may occur in the genital region, giving rise to grave and unnecessary apprehension, remorse, or suspicion on the part of the innocent patient.

CASE CXXXII

A prepossessing young matron of thirty-five had married at the age of twenty, had had three normal labors at term, and had been in good health until she recently received from her husband an acute Neisser infection. Shortly after the burning and painful micturition became better, she had a tender swelling on the " front of the vagina "; this subsided, but four months later recurred, causing interference with coitus and obstruction to micturition: she then entered the writer's hospital clinic.

Diagnosis. — Pelvic examination disclosed a bulging, fluctuant, tender mass, the size of a hen's egg, on the anterior vaginal wall, just to the right of the median line, and closely simulating a cystocele. Pressure on this mass caused a profuse purulent discharge from the urethra. The temperature was 101.8° F., and the white count 12,000.

Treatment and Result. — Under ether anæsthesia the bladder was catheterized of fourteen ounces of urine, and irrigated with boric acid solution: with the catheter still in the urethra the mass was opened by a two-inch linear incision parallel to the median line, and proved to contain an ounce of thick, creamy pus. No macroscopic fistula could be found leading to the urethra, although a small one must have existed. The abscess cavity drained for a number of weeks, but finally closed, and the patient recovered completely. The small urethral fistula closed spontaneously.

Comment. — Periurethral abscess is relatively common in the male, but is rare in the female, evidently because of the short urethra of the latter, and because in women the infection is more likely to be washed out from the urethra by the urine. But in the case above stated the gonococcus must have burrowed into a mucous gland or small diverticulum, and caused the abscess: it would have been more to be expected that Skene's gland should have caught the infecting organism. Sometimes the fistulous urethral opening does not close spontaneously, as in the above case, and has to be closed by plastic operation.

CASE CXXXIII

An anxious-looking woman of twenty-six had been married four years. Her catamenia began at thirteen and had always been somewhat irregular and slightly painful. The year after her marriage she miscarried at four months; and ever since, she has had attacks of severe pain in both lower abdominal quadrants, worse on the left: the attacks come at intervals of about two weeks, and last a week. There is a constant, slight, white vaginal discharge. For these symptoms she seeks relief, and hopes she can be enabled to become pregnant again.

Diagnosis. — The patient was wearing a pessary for the support of a retroverted uterus; but in view of general pelvic tenderness this was removed. The retroverted uterus was firmly held by adhesions; palpation of the pelvis showed thickening of both appendages, especially the left, — evidently a chronic pelvic inflammation involving both tubes and the pelvic peritoneum.

Treatment and Result. — As this was in June the patient was advised to see what the summer's rest and certain general measures would do for the relief of her symptoms: hot douches were advised, and attention to the bowels and habits of living. In the autumn the general condition was much improved, and there was much less pelvic tenderness: there had been a considerable absorption of exudate, and bilateral masses could easily be made out. As the patient was anxious for children she was advised to have the abdomen opened, and conditions dealt with as found. At this time the temperature was normal, and the white count 7000: she was in good condition for operation.

Operation. — By the usual median incision, and after the separation of adhesions, the left tube was found to be thickened and occluded, and the left ovary cystic: both were removed. The right ovary was cystic; the right tube was club-ended and impervious: the small ovarian cysts were punctured, and the right tube resected, split, and sewed over and over with fine catgut. The uterus was suspended and the abdomen was closed in layers without drainage. The

convalescence was normal, and the patient went home three weeks after operation. The patient was seen from time to time in ensuing months, and was treated for anæmia, constipation, and indigestion: in a little over two years she called to say that she was between six and seven months pregnant. When this baby was two and a half years old the mother called to exhibit it, and express her desire for another. There seemed to be no reason why this desire might not be gratified: the catamenia were normal, there was no evidence of trouble with the resected tube, and the uterus was free.

Comment. — Although the gonococcus was not found in this case, the pelvic condition was clearly due to this infection. The case illustrates the value of conservative treatment of the appendages: while the left tube and ovary were hopelessly damaged and had to be removed, a part of the right tube was preserved, and the distal end was split open and overcast to form a new trumpet-like opening to receive the ova from the adjacent ovary: one baby has already been born, and there is no apparent reason why others should not follow. Of course some chance was taken in leaving the right ovary and simply pricking the numerous small cysts: such ovaries sometimes give subsequent trouble and secondary laparotomy has to be done; but the result in this case seems to have justified the course pursued.

In the treatment of sterility due to gonorrhœal infection of the tubes, it is entirely legitimate to open the abdomen in the hope of being able to restore fertility, even in the absence of pain or other distressing symptoms; but the patient should be made to realize that there is always an operative risk, and it should rest with her and her husband to decide whether they will take this risk for the sake of possible offspring. Fatal pulmonary embolism has followed so simple an operation as ventral suspension. The following fatal issue occurred in the experience of the writer:

A young woman of twenty-four had been married four years, but had never been pregnant: there was no dysmenorrhœa or other menstrual anomaly; in fact, she had no symptoms whatever, but sought advice on account of her sterility. The uterus seemed normal; but thickened appendages on

both sides pointed to a probable gonorrhœal infection in early married life. Through a median incision both tubes were found thickened in their distal half, club-ended, and occluded: both were resected. The patient was making a normal convalescence, when a week after operation she died suddenly of cerebral embolism from an unknown chronic endocarditis.

CASE CXXXIV

A matron of twenty-eight, who had borne and suckled four children in the five years of her married life, sought advice for general poor health, but was found to have no pelvic disease and to be suffering only from debility. A year later she gave birth to her fifth child. Apparently during this fifth pregnancy she was the victim of a gonococcus infection, which reached her Fallopian tubes during the puerperium. When her baby was seven weeks old she sought advice for vaginal discharge and severe backache.

Diagnosis. — It was found that besides anæmia and general debility, a tear of the cervix, without hyperplasia, and a retroversion of the uterus, the appendages were somewhat enlarged and tender.

Treatment. — Under ether the uterus was replaceable: at this time it was thought best not to open the abdomen; but the uterus was curetted and the torn cervix repaired. The pathological report on the scrapings was hyperplastic endometritis: the gonococcus was not found, as it generally is not, in the curetted material; but during this convalescence the husband came and admitted of his own accord that he had contracted gonorrhœa during his wife's pregnancy, and feared lest she might have been infected by him.

This much injured wife made a good convalescence, and while she remained in bed was quite comfortable; but soon after going home she began to have constant pain and distress in the left lower quadrant: she had no fever, chills, nausea, or vomiting; but there was a thick, yellow discharge, and on account of the pain and practical certainty of tubal infection the patient was advised to return to the hospital for abdominal operation. She was kept in bed for three weeks and received medical treatment to improve her general condition. The temperature meanwhile remained normal. The left appendages were enlarged and tender; but on the right nothing abnormal was found.

Operation and Result. — About three months after the birth of her fifth baby the patient's abdomen was opened: the left tube was found thickened, impervious, and adherent,

the ovary the seat of a small abscess: both tube and ovary were removed. The right appendages were prolapsed; but the tube seemed not to have been infected; the ovary, however, was enlarged by a small cyst: this ovary was resected, and the tube left *in situ*. The uterus was suspended, and the abdomen closed in layers without drainage. The patient made a good convalescence, and went home in good general condition.

Subsequent History. — Five months after the removal of her left tube and ovary, and the resection of the right ovary, the patient reported herself as well, but apparently two and a half months pregnant: the uterus was found suspended, and the abdominal scar linear. This baby, a girl, was born at full term, and another girl eighteen months later: the mother had no trouble with either of these cases, in pregnancy, labor, or puerperium; but when the second baby, which she also suckled, was six months old, she found herself weak and anæmic, and received appropriate treatment. Sixteen months later a third girl was born, third, that is, since the laparotomy, and again, nineteen months later, a fourth girl: it began to seem that there is some truth in the belief held by some people that boys are born from the ova of one ovary, and girls from the ova of the other; for this woman had had four successive girls from her resected right ovary. But unfortunately for this belief, four years and four months after the birth of the fourth girl, a boy was born. To recapitulate, this woman has borne ten children, the last five of whom from a single resected ovary: it is, perhaps, needless to add that this is not old American stock. The mother is now, at this writing, forty years old, and there are further possibilities: when last seen she was run down from lactation and overwork; but there was no pelvic trouble.

Comment. — In the absence of positive bacteriological evidence it may be questioned whether this was a case of gonococcus infection; but the clinical history and the admitted infection of the husband seem reasonably conclusive. Of course it is true that generally both tubes are involved in this infection, but not invariably. Then, too, it is possible that the curetting and disinfection of the uterus, and the

removal of the infected left appendages, may have forestalled the infection of the other tube.

It might be added that this case illustrates the value of conservative pelvic surgery, if it is still desirable to preserve the fertility of women.

As regards the usually bilateral tubal involvement when the gonococcus is the exciting cause of infection, experience seems to teach that while symptomatic recovery in rare instances takes place without surgical removal, wholly or in part, in the so-called puerperal salpingitis, which is usually unilateral and more frequently due to other organisms than the gonococcus, symptomatic recovery without surgery is relatively frequent; and while the affected puerperal tube may be impervious and useless, it generally does not interfere with normal pregnancy by way of the other tube. On the other hand, unilateral salpingitis from puerperal infection sometimes proves to be a smouldering fire, and subject to exacerbations more serious than the original inflammatory process. A patient of thirty-six, whose degree of multiparity was unrecorded, suffered such an acute exacerbation of a chronic puerperal salpingitis, and entered a private hospital for treatment: after nearly two weeks of rest and ice-bag treatment, the temperature became normal, and a large, left tubo-ovarian mass was removed by laparotomy, difficult on account of adhesions; the right tube was entirely normal, but the cystic ovary was resected. There was so much oozing from separated adhesions that a pressure drain was necessary; and after an afebrile convalescence there was a sinus in the site of the drain: this, however, closed later. Two years after laparotomy the woman bore another child and was in excellent health. At the end of another two years she was still flowing for six days at her periods, with one resected ovary, and there was no pelvic trouble.

CASE CXXXV

A young woman of twenty-two, who was married at sixteen, entered the writer's clinic on account of pain in both lower abdominal quadrants: she said she had had a similar attack seven years previously. There had been chills and fever, but no vomiting. She menstruated without pain; but the periods were irregular, with five to six weeks intervals. She had had no children, but thought she had miscarried before her emigration.

Diagnosis. — The uterus was found pushed upward and forward by a large, fluctuant mass to the right and behind, bulging the posterior vaginal fornix. With the history of chills and fever, the mass must be inflammatory: it could be only a pelvic abscess.

Treatment and Result. — No time was to be lost, because by delay the abscess might rupture into peritoneum, bladder or bowel, with the train of symptoms naturally to be expected. Vaginal section was therefore done the day of admission: sixteen ounces of pus were collected; the abscess cavity was irrigated, and drained with iodoform gauze. Seventeen days later the shrinking abscess cavity ceased draining, and the patient had no symptoms; but the left appendages were prolapsed and thickened, the uterus was retroverted and partly held by adhesions: the right appendages were also thickened. She was discharged, relieved.

Comment. — This young woman probably had a gonorrhœal infection soon after marriage or before. The pelvis was probably well roofed in with adherent bowel and omentum. The conflagration was confined to the pelvis, and the pelvic contents suffered much as the burning contents of a fire-proof room in a storage warehouse. No one would think of opening the abdomen for such a condition: it doubtless would be fatal to do so. Ordinary surgical judgment would point to the vaginal evacuation of pus, and drainage of the abscess cavity. It is not to be supposed, however, that after suppuration and drainage have ceased, the patient is permanently well. While such is sometimes the case, very generally recurring symptoms make it necessary to open the abdomen in order to remove the abscess sac and whatever may be left of ovary and tube from the pelvic conflagration.

CASE CXXXVI

An attractive young mother, of Irish nativity, appeared with her five-weeks' old baby and complained of a tender swelling in the lower part of the abdomen of five days duration. She was suckling her infant, as she had her two previous children, and her catamenia had not yet become re-established since her latest labor. She gave a history suggesting a pyogenic obstetric left tubal infection following her first childbirth.

Diagnosis. — Her general physical examination was normal except that she had a temperature and pulse of 100 each. Midway between umbilicus and symphysis pubis was a red, tender, indurated sessile swelling, the area of the palm of the hand. This area seemed to be connected with a hard, tender mass in the left vaginal vault, the size of an orange. A diagnosis of tubo-ovarian or pelvic abscess was made.

Treatment. — The patient was kept in bed, with an ice-bag applied to the lower abdomen. Her pyrexia rose steadily to 103.4° on the third day, when her white count was found to be 25,600. The abdominal mass now began to feel deeply fluctuant. The ice-bag was therefore replaced by a poultice, and on the fifth day definite fluctuation was elicited. Under ether the mass was therefore opened by a median linear incision, and was found to be an abscess in the abdominal wall, communicating through a small hole in the fascia with a tubo-ovarian abscess of the left side. With care not to break the adhesions which walled it off from the general peritoneum, this cavity was drained with a cigarette wick. The patient's temperature immediately fell to normal. The wick was withdrawn at the end of a week, and the resultant sinus closed in another fortnight. The patient was discharged three weeks after operation, with a small residual mass in the left vaginal vault, but entirely free from symptoms.

Comment. — It is true that pelvic abscesses, proceeding from tubo-ovarian infection, usually point towards the pouch of Douglas, whence they may be opened; or they may open spontaneously, into the vagina, rectum, or bladder. This is

because it is usually in the posterior cul-de-sac that inflammatory tubo-ovarian masses become adherent. In the present, rare instance, the mass happened to become adherent in front of the uterus, and therefore pointed through the anterior abdominal wall in the median line. Somewhat less rarely such masses may become adherent laterally to the anterior abdominal wall, in which case the resultant abscess will make its way along the inguinal canal and point at the external ring.

CASE CXXXVII

A physician's wife had borne three children under the writer's care: the first child was delivered with low forceps, the other two cases normally. In each case the convalescence was normal, and the lady was in excellent health: there was never any pelvic complication until some three years after the last puerperium. This lady went to church on a given Sunday morning, feeling perfectly well; at lunch she had to leave the table, and vomited: seen in the afternoon she looked sick, and had some pelvic pain, for which examination could then discover no reason. The next day there was an elevation of pulse and a temperature of 102° F.: vaginal examination showed only a general tenderness; no masses were made out. On Tuesday, in spite of ice-bag and saline catharsis, there was no improvement in symptoms; there was more tenderness, and a boggy feeling in the posterior vaginal fornix: there was more pain, felt in both lower quadrants, for which small doses of morphia were given. On Wednesday, the pulse had risen to 120, the temperature to 103° F.; there was marked tenderness both vaginally and over the whole hypogastric region; the facies was peritoneal; a consultation was held. The next day, Thursday, the abdomen was opened, on a diagnosis of salpingitis of unknown origin, with pelvic peritonitis becoming general.

Operation and Result. — There were fresh cob-web adhesions everywhere; the general peritoneum was infected; large masses of suet-looking plastic lymph were removed from the intestinal coils; the Fallopian tubes were swollen to the size of the thumb and of a plum color; there was a moderate amount of bloody serum in the cavity. The appendix was inspected and found normal. Both tubes and both ovaries were removed, masses of lymphoid exudate also, and the peritoneal cavity left as clean as possible by moist sponging: it was not dared to close without drainage. After the usual two days of anxiety the convalescence proceeded with satisfaction and the patient got well, to the great surprise of the surgeons associated in the case.

Comment. — The pathological report gave the first intimation of the nature of the infection, — pneumococcus; and this explained the cyclonic, Sunday to Wednesday attack, similar to some of the rapidly fatal pneumonias. As in most of the pure streptococcus infections, this infection failed to localize, but passed rapidly on to a general peritonitis. To-day, after more than a decade, the patient is alive and well, and must be regarded as a passenger saved from floating wreckage, after the ship has gone down. No credit is due to the writer for this result, for the operation was done at his request by another surgeon. The case illustrates the tragic possibilities in this terrible infection, and shows how much depends on the resistance of individual patients.

CASE CXXXVIII

A nulliparous woman of twenty-eight, married two years, is brought to the hospital with the history that three days before, while standing on a chair putting up curtains, she fell, and struck her privates on the corner of a table: she has had complete retention of urine ever since, and has been catheterized by her physician.

Diagnosis. — Physical examination found general normal conditions except for slight tenderness in the left lower abdominal quadrant. A smooth, rounded tumor rising above the pubes proved to be the full bladder, and disappeared on catheterization: the urine was slightly bloody, but otherwise normal. On inspection of the genitalia the right labium majus was seen to be the seat of a hæmatoma, the size of a hen's egg. The introitus was stretched, the cervix small and nulliparous, the uterus normal in size and position.

Treatment and Result. — The patient was kept in bed with an ice-bag applied over the genitals, and the bowels were kept open with cathartics and enemata. On the second day she became able to void urine spontaneously and the urine soon became free from blood. The hæmatoma began to absorb, and as there was no evidence of its breaking down, she was discharged, relieved, in five days.

Comment. — In a man, retention and hæmaturia, following such an injury, would almost surely indicate rupture of the urethra. In the woman, the urethra is better protected, and rarely suffers injury. Even when this is the case, stricture is much less likely to ensue and to be followed by serious consequences than in man, just as is the case with urethritis.

CASE CXXXIX

Several years ago the writer was called to one of the leading Boston hotels to see in consultation a young woman on her wedding journey. The physician first called to the case, in the preceding night, had found the patient with a profuse vaginal hæmorrhage, which proceeded from a rent in the wall of that passage. He employed pressure by means of a tampon, and at the time of the writer's visit with him some hours later the bleeding had practically ceased. On examination a longitudinal tear was found extending from just within the introitus about two inches along the left-latero-posterior vaginal wall. The rent was of sufficient depth to receive the index finger, and on manipulation still bled moderately. As the couple wished to resume their journey as soon as possible, it was thought best to continue the simple tampon pressure; but were the patient to have remained for a few days in town, it would have been more satisfactory treatment to have closed the rent with sutures. There was a definite history in this case of the laceration having occurred the night previous to the visit, in the act of coitus.

A young married woman consulted the writer at the Boston City Hospital, on account of hæmorrhage from the vagina which had lasted for four or five weeks. She had previously consulted two physicians, both of whom had treated the case as one of metrorrhagia, without success. The last physician had inserted a soft-rubber doughnut pessary for the relief of a supposed uterine displacement. On the removal of this pessary a foul discharge of retained and decomposed blood followed. After thorough disinfection of the vagina the source of the hæmorrhage was discovered. Starting from the cervico-vaginal junction on either side was a rent extending laterally for three-quarters of an inch: the sound entered these rents about a quarter of an inch, and there was a continuous oozing of blood from them. The cervix had apparently been pushed forcibly upward and backward, and the transverse lacerations of the vaginal vaults thus occasioned. The parts were cleansed with a two per cent solution of creolin, iodoform powder was blown into the rents, and the vagina

was packed with cotton tampons wrung out of a ten per cent mixture of iodoform and glycerine. Three days later all bleeding was found to have ceased, and in a fortnight the parts had entirely healed.

In a private patient another case was seen of injury by coitus, in all probability, although there was no history to that effect, and the existence of the lesion was unknown to the patient. In this case the hymen was rather thick, and of the so-called annular type; that is, there was a small central aperture. This hymen was found attached to the right side of the introitus vaginae only, it having been entirely stripped away from the left side; it had retracted somewhat, and was attached, as by a hinge, on the right side. As the woman had never borne children, and in the absence of any history of known injury or operation, it is probable that at the first complete coitus, the thick annular hymen, instead of incurring the usual radial lacerations, was entirely torn away from its attachment on one side.

Comment. — Most text-books have little or nothing to say on this subject, and the " American System of Gynæcology " makes no mention of it. Holmes in his " System of Surgery", Vol. II, page 749, says that the vagina has been torn, with the hymen, in the attempts at coitus for the first time, sometimes with alarming hæmorrhage.

In the " Real-Encyclopädie der Gesammten Heilkunde", No. 14, page 375, the author says: " Whether the vagina can be torn by coitus appears questionable, although some old observations exist according to which, through roughly practised coitus, laceration of the vagina and death from hæmorrhage have occurred. The rupture is either limited to the vagina, or it involves the cervix and vaginal vaults. The lower part of the vagina may be the seat of rupture, with rupture of the perineum. In the vaginal vaults occurs not seldom transverse separation of the vagina from the uterus. In rare cases the vagina may be entirely torn from the uterus".

Barnes, in his " Diseases of Women", page 870, describes a specimen in the museum of St. George's Hospital of laceration of the vagina from coitus in an old woman: " There is a rent passing along the upper two inches of the vagina, dividing the

mucous membrane and the adjoining fibres of the muscular coat. The rent deepens as it ascends, and on a level with the os uteri has broken through into the peritoneal cavity. The hole in the peritoneum is not quite large enough to admit the little finger".

It may be said, then, that laceration of the vagina does occur occasionally from undue violence in the act of coitus, and gives rise to symptoms of sufficient gravity to require medical advice. Minor lacerations of the hymen, involving to some slight extent perhaps the vaginal wall, but insufficient to cause alarming hæmorrhage, are probably not infrequent. Cases of the graver kind, requiring immediate treatment for the arrest of hæmorrhage or later plastic repair, are occasionally reported in periodical literature. A case reported by Mann, of Buffalo, is recalled, in which the patient entered the hospital with a recto-vaginal fistula which was attributable to violent coitus.

Treatment. — The treatment of lacerations of the vagina consists primarily in the arrest of hæmorrhage, which is sometimes profuse. In small tears, with only moderate venous oozing, pressure with firmly applied tampons is sufficient to arrest the bleeding. But in large rents involving arteries or large venous plexuses, it is best to expose the parts with speculum and retractors, and close the laceration with sutures; by this method the hæmorrhage is more promptly controlled, and the integrity of the parts restored. Extensive lacerations followed by sloughing and fistulae require secondary plastic operation.

CASE CXL

A bookkeeper, thirty-two years of age, unmarried, gave the following history: The general health had always been fairly good, and the menstrual function normal; she had suffered more or less with hæmorrhoids, and twelve months previously had been operated on for the cure of a fistula in ano. Since the operation she had suffered with soreness about the vulva, and also with incontinence of intestinal gases and semi-liquid discharges. It was from this last annoyance that she especially sought relief.

Diagnosis. — Physical examination disclosed a short fistulous tract extending from the lower border of the sphincter ani to an opening about two inches to the left of the anus: further, the sphincter was entirely laid open at its upper left border, and a gaping sulcus extended from this point upward toward the left, along the inner border of the left labium majus to a point opposite the lower third of the left labium minus. There was a small button-hole opening through the left nympha: the hymen was intact. The symptoms and lesions presented were essentially those of a complete rupture of the perineum, although the vagina was in no way involved. It was obvious that there had existed a fistula in ano extending from within the sphincter upward and to the left between the labia, that this fistula had been laid open, and that the sulcus had subsequently failed to unite, although the surfaces had cicatrized.

Treatment and Result. — The indicated treatment was to close the sphincter and restore the integrity of the parts. The necessary denudation was made, the rectum was closed in with catgut sutures, and the sulcus above with silver wire. The wire sutures were removed on the tenth day, good union had taken place, the deformity of the parts was removed; and on discharge, two weeks later, the patient had entire control of the sphincter ani as regards both liquid fæces and intestinal flatus.

Comment. — The fistula in this case was probably tubercular in origin, and had been treated by simple incision: the result was as shown above, loss of sphincteric control. Under

RECTO-VULVAR FISTULA

DENUDATION FOR PLASTIC REPAIR

rational treatment involving the subsequent integrity of the sphincter ani the sinus is laid open, care being taken to incise at right angles to the sphincteric muscular fibres; the so-called pyogenic membrane and all adjacent abnormal tissues are dissected away; and the sulcus is then closed with buried sutures passed entirely around the fistulous tract, the sphincter to be closed as in cases of complete rupture of the perineum.

CASE CXLI

The wife of a prosperous merchant, her second husband, had borne her only child by her first husband in Paris, when she was twenty-seven years of age. At this labor, she states, she suffered a complete rupture of the perineum. Returning to this, her native, country the same year, she had an early abortion induced by a prominent gynæcologist, for reasons not given, who subsequently undertook the repair of the anal sphincter and pelvic floor: the operation was said to have been unsuccessful. Ten years elapsed, and the writer saw the lady in the emergency of an inevitable abortion in the third month of pregnancy. Although illegitimate induction was suspected, there was no proof, and the writer conducted what proved to be a normal convalescence: it was observed that the anal sphincter was severed and that there was a recto-vaginal fistula higher up. The lady was advised to have these lesions repaired, in view of her statement that for ten years she had suffered with incontinence of fæces and intestinal flatus, and also with an involuntary mucoid intestinal discharge: furthermore she had found it necessary to absent herself from church, from theatres and social occasions, and from all but short drives, because she must always be able quickly to reach a toilet room, or to subject herself to the chagrin of soiling her clothing and of being a cause of æsthetic offense to those about her. This advice was not taken, because of the failure to repair her lesion by an eminent gynæcologist in another city, in whom she had entire confidence.

Five months later this lady again became pregnant, and was duly delivered by the writer. In the succeeding months she evidently changed her mind, and decided to have a second attempt made to restore the anal sphincter and close the recto-vaginal fistula.

Operation and Result. — It was found that the recto-vaginal fistula had been formed in the imperfect healing after the unsuccessful attempt at repairing the vagino-sphincteric tear twelve years before: the bridge of scar tissue between the fistula and torn anus was therefore cut away. Before mak-

RUPTURE OF THE ANAL SPHINCTER

With Eversion of the Rectum

ing the necessary denudation, the long disused and contracted anal sphincter muscle was thoroughly stretched, — an important step in the technique. The edges of the torn rectum were then vivified, and closed with chromic catgut sutures, tied on the rectal surface, and left hanging from the anus: in closing the anus itself care was taken to take deep stitches so as to include the ends of the severed muscle, marked by the little dimples before the denudation was made; the two anal sutures were of silver wire, closed by twisting so as to bring the muscle ends together. The fistula having thus disappeared, and the rectum and sphincter closed, the necessary denudation of the perineum was made: as the tear was a central one, and the vaginal lateral sulci not involved, the Hegar operation was done; catgut was used for the inner, vaginal, and silver wire for the deep, outer, perineal, sutures.

The bowels had been thoroughly emptied before operation; and for several days after operation nothing was given but water, coffee without milk, and strained chicken or lamb broth: no opium was used. On the fourth day the bowels were first moved by oil enema, and for three days thereafter acted spontaneously, with soft mushy movements; later small enemata were given when necessary: menstruation occurred from the ninth to the fourteenth day, and the vagina was then given a cleansing irrigation. The wire sutures were removed on the eleventh day. The patient left her bed on the twentieth day, and had had entire control of the sphincter from the time of operation. The involuntary mucoid discharges ceased entirely.

Comment. — The plight of a woman without control of the anal sphincter is a pitiable case: if she belongs to the humble, hard-working class, she becomes an offense to herself and her family; if to the wealthy class, she secludes herself from society, and is liable to become a victim to melancholia. If a first attempt at closure of the sphincter fails, subsequent attempts should be made after reasonable interval; but if the bowels are well prepared beforehand and managed skilfully after operation, and if the patient is willing and intelligent enough to accept a suitable diet and avoid straining when the bowels move, the operation should seldom fail in the

hands of an experienced gynæcologist who has followed a good technique. Different operators have different methods; each must find and adopt by experience a technique that in his hands is successful. Some surgeons confine the bowels for ten days after operation with opium: in the writer's opinion this is not a desirable method; the idea of ten days without bowel evacuation is to him unthinkable, his method being not to confine the bowels at all, but whether by enemata or by cathartics to keep the bowels moving, generally from the first or second day.

Not all patients have immediate control of the repaired sphincter, although many do. But when the sphincter muscle has been long disused, it has in some cases to be trained by the patient before its function is fully restored both as to liquid fæces and intestinal flatus: if the arm were to be kept in a sling for ten years, its muscles could hardly be expected to be capable of function without massage and active attempts at use and control.

In regard to the form of operation, primary or secondary, for repairing the ruptured vagina and perineal body, of course the desideratum is the anatomical restoration of the parts, and that operative technique must be followed which will accomplish this object. In many cases the vaginal tears are not central, but have severed the levator in one or both lateral sulci: to this type of case the operation of Emmet is particularly applicable; but in the opinion of the writer this operation can be improved by so denuding and applying external sutures as to restore the fourchette, after uniting the hymeneal ring. As to suture material each operator should naturally use that which will give best results in his hands: for the deep perineal sutures, silver wire has proved preferable to the writer, twisted to a nicety, the ends left two or three inches long and gathered into a piece of small rubber tubing. It is thus easier to secure exact coaptation of the skin or mucous edges than with a tied or shotted suture; but, as said, each operator should adapt his technique in accordance with his own experience.

In regard to the care of patients after criminal abortion: if the criminality is suspected, but not proven or acknowl-

edged, of course the woman should be given the benefit of the doubt. If it is known that abortion has been induced criminally, each physician must decide for himself whether he will associate himself with the case, and take the responsibility of another's illegal act, or leave it for some other complaisant colleague. Of course other conditions than the physician's inclinations must control the decision: there may be no other available physician, the woman may be bleeding seriously, and humanity naturally compels an unwilling acquiescence. But in such cases, the physician, if young and without established reputation, will do well to lay the facts before the medical examiner, pending the ultimate result, or at least call on a consultant to share the responsibility and the knowledge of the case with him.

CASE CXLII

An eminent neurologist refers the wife of a professional man for opinion. The lady, thirty-two years of age, has had three children and one accidental abortion. For some time she had suffered with headache at the vertex: the neurologist after careful examination and observation had been unable to find any cause for this symptom, and otherwise the patient was in excellent health; the query was whether the headaches were a reflex symptom of some pelvic condition. The catamenia were regular, perhaps a little more profuse than formerly, and without pain; there was no inter-menstrual discharge.

Diagnosis. — There was a good pelvic floor, no trouble could be found with the appendages, the uterus was well involuted and in normal position; there was a deep left lateral tear of the cervix with eversion and marked hyperplasia; there was no erosion, but the enlarged left angle was hard and cicatricial, and there were some deeply embedded Nabothian retention cysts, feeling like buried shot. It seemed reasonable to believe that the vertex headaches were attributable to the compression of the cervical nerve ganglia by the scar tissue in the hypertrophic laceration: it was advised that the cervical cicatrices be excised and trachelorrhaphy performed.

Treatment and Result. — This advice was accepted and the operation performed, care being taken to remove all the cicatricial wedge; the denuded rent was closed with silver wire, regard being had to leaving the cervical canal straight and not too small. After a normal convalescence and satisfactory result the patient was returned to the care of the neurologist. For a time the reflex headaches persisted, as these symptoms usually do; small doses of ergot were given for a few months, and then the headaches disappeared and the lady felt perfectly well: the end seemed to have justified the means.

Comment. — Unquestionably trachelorrhaphy has often been done unnecessarily in the past, and perhaps it is still so done; and when performed on parous women obstetric diffi-

culties sometimes ensue. There is no question that deep cervical tears in parous women sometimes demand surgical repair, — in the presence of harassing reflex symptoms, as in the case above narrated, and when there are marked hyperplasia, eversion, erosion, cystic degeneration, vaginal discharges, and menstrual disturbances *which cannot be alleviated by palliative local measures until after the period of fertility has passed:* sometimes, too, frequent abortion seems attributable to a torn and infected cervix, and trachelorrhaphy is legitimately performed to promote further fertility. But when the cervix of a parous woman is repaired, great care must be taken to ensure a straight and sufficiently large canal. On the other hand, whenever it is possible, as it often is, by topical treatment and general measures, to heal erosions, check discharges, regulate catamenia and relieve symptoms in parous women, it is wise to do so, and defer surgical repair until the menopause: then, as pointed out elsewhere, having in mind the fact that 98 per cent of the cases of cervical cancer appear in the torn cervix, the responsible family physician should either keep such cases under keen observation, or refer them to a gynæcological surgeon for operation.

Subsequent History. — The lady whose case is above narrated conceived nineteen months after the cervix had been repaired; naturally she was desirous of escaping another laceration: the history of her ensuing labor follows. Unfortunately the membranes ruptured an hour before the pains began, waking her from sleep. Vaginal examination an hour and a half later found the cervix, primiparous in shape, not yet taken up and dilated only to a finger tip: the cervix felt soft on the right; but at the seat of repair on the left it was somewhat cicatricial. The unengaged head was presenting O. L. A.; the pains were still rather feeble. Six hours later the contractions began to be stronger; and in three-quarters of an hour the head had descended into the cavity, the cervix was taken up, the edge being soft and thin like a primipara's, and was dilated to one and three-fourths inches; on the left, however, the site of cervical repair felt somewhat thickened. In half an hour the os was dilating rapidly, and ether was given in small quantities to temper the

force of the pains; the descent of the head was also controlled with the fingers, lest it be forced through the cervix prematurely. The second stage lasted only three-quarters of an hour, in spite of the fact that ether was used and the patient was not allowed to strain: there was no apparent rupture of the cervical ring. The mother and her eight-pound baby did well, and when the latter was four weeks old inspection of the mother's cervix was made with a speculum: there was a very small fissure on the left; but the os would not admit a finger tip.

CASE CXLIII

A young German *Hausfrau* married at nineteen, and her baby came a year later. For the ensuing four and a half years she said she and her husband took steps to avoid another pregnancy: for the last six months, however, they had thought they wanted another baby, and had taken no precautions; but conception had not resulted, and she wished to know why. The catamenia were regular; but there was considerable vaginal discharge. Aside from nervousness and indigestion she considered her health good.

Diagnosis. — It was found that while the uterus was in normal position, the cervix was torn and eroded. Nothing wrong could be found with the appendages, and there was no pelvic exudate. It seemed reasonable to presume that the considerable discharge from the torn and eroded cervix was a sufficient cause of the failure to conceive. The young woman was advised that local minor treatment might heal the cervix and stop the discharge; but if this failed after a reasonable time, curettage and trachelorrhaphy would be indicated.

Treatment and Result. — The patient elected to try the simpler though longer method, which would not take her from her home. Accordingly, in addition to therapeutic measures for indigestion and constipation, and a bi-daily vaginal douche when tampons did not interfere, systematic topical treatment of the cervix was begun. The treatment consisted of first, cleansing the cervix and its gaping canal with Dobell's solution; second, thorough painting of the cleansed surfaces with Churchill's tincture of iodine; (iodine penetrates well, and is a good antiseptic; but it will not take hold of a surface covered with glairy, muco-purulent discharge: hence the Dobell, which dissolves away this sticky coating); third, the application of a wool tampon well charged with glycerite of tannin, ichthyol and glycerine, or even plain glycerine, according to circumstances, the tampon to be worn until bedtime of the following day, when the patient would remove it and take a cleansing douche.

These treatments were given at intervals of from five to ten

days, according to the menstrual period, weather (it was in the Winter), and the patient's convenience: after nine office visits the cervix was practically healed, and except for vaginal douches all treatment was suspended for the summer. The patient did not come again for eight months, when it was found that the cervix had remained healed, and that there was no vaginal discharge whatever: she was told that no further treatment was necessary. After her next period she became pregnant, and wrote from her home in another city for advice in regard to morning sickness.

Comment. — No inquiry was made of this patient as to the means employed by herself and husband to prevent conception; it was evident, however, that the vaginal discharge had proved an effective barrier. Probably their method was what is well understood as withdrawal, — a method which in time generally does harm to the woman. Possibly a condom was used; but unless used understandingly, this is likely to cause soreness about the introitus, and it is mortifying to the wife to have to visit a physician for the removal of a condom lost in the vagina. Besides, the condom is by no means always effective in preventing conception; not a few conceptions have resulted from rupture of this treacherous appliance. Many are the devices resorted to, both in wedlock and in the underworld, to prevent insemination; such as the penile covering above referred to, or the womb-veils and sponges of the demi-monde; or, again, to wash away or destroy the spermatozoa by the use of douches and germicides. Physicians are often consulted by both men and women as to how they may have sexual congress without the risk of the physiological result: each physician must decide for himself what his advice shall be; the writer has always felt obliged to say to such inquirers that he knows of but one sure, harmless, and moral way of avoiding conception, and that is sexual abstinence. At the close of a Harvard Medical School public lecture, to women only, on the personal hygiene of women, the writer announced that he would be happy to answer any question of individuals present on any point of his lecture not made clear. In response, a well-dressed and intelligent looking young woman came to the lecture-table and said,

"You omitted one topic from your lecture which I expected to hear about; will you not tell me now how a woman may have sexual intercourse without the risk of becoming pregnant?" In the light of what has been said above, it is unnecessary to say what the writer's answer was; but somehow he couldn't help feeling that perhaps his lecture had been a disappointment to others of his audience.

A word should be said in regard to the use of medicated vaginal tampons. The best material is lamb's wool, which quite well keeps its elasticity; absorbent cotton becomes hard and closely matted together. While occasionally, for the purpose of exerting pressure to help raise a displaced uterus, a number of small pieces of wool are used, tightly wedged into the vagina, and which have to be removed by the physician, generally, for purposes of applying medication, a single tampon of sufficient size is employed: this latter should have a small tape or string attached, by which the patient may remove it herself; and self-removal will be facilitated, if the patient assumes a squatting position with thighs well separated. In using medicaments which have an unpleasant odor, like ichthyol, care must be taken in placing the tampon not to smear the drug on external parts or clothing; once within the vagina the tampon will not offend the patient's sensibilities. When glycerine is used, it will, of course, as intended and desired, cause a copious watery discharge of serous derivation; thus the patient's clothing will be made wet and uncomfortable before she may reach her home from the physician's office: this discomfort may be avoided by placing some dry, non-absorbent cotton below the tampon; and it is a thoughtful thing to advise the patient to bring a clean napkin, which she can apply after the tampon is placed before leaving the toilet room.

CASE CXLIV

A married woman of forty-two entered the writer's clinic on October 2, with the following history: her fifth labor had occurred a month previously; it was instrumental, the child being stillborn, and ever since the delivery urine had dribbled from the vagina. For a month she had lain in bed uncared for.

Diagnosis and Pre-Operative Treatment. — The buttocks were covered with bed-sores, the general condition was very poor, and the nervous system unstrung. The vulva and vagina were excoriated and reddened, the vaginal walls encrusted with phosphatic deposits, and the vault was a mass of sloughing tissue. High up could be felt a vesical fistula, the exact relations of which could not then be determined.

Two weeks were spent in restoring the patient's general health, healing the bed-sores, arresting the necrosis about the fistula, and removing the phosphatic deposits from the bladder and vaginal walls. Various measures were tried for the latter purposes; but the most effectual treatment was the following: salol and boracic acid were given internally, with diluent drinks; bladder and vagina were irrigated with two per cent boracic acid solution; the vaginal vault was thoroughly swabbed with hydrogen peroxide, again irrigated, and then dressed with cotton wetted with one-fifth per cent hydrochloric acid. The bladder was also irrigated with the same strength of hydrochloric acid. The sloughs that came away were found to be composed of loose unstriped muscle and connective tissue.

October 28, a careful examination was made under ether. The uterus was high in the pelvis, and firmly fixed. The posterior cervical lip had partly sloughed away, the anterior infra-vaginal cervix entirely so. The fistula, which was between three and four cm. in diameter, was held immovably in the cicatrix of the vaginal vault, and the upper border could not be drawn down within easy view. The left ureteral orifice was one-half inch below and to the left of the fistula; the right, one-fourth inch below and to the right. The bladder was contracted and its walls thickened; but the

mucosa looked healthy. The upper border of the fistula was densely adherent to the uterine wall. The posterior surface of the vagina looked normal and free from cicatrix.

After a careful study of this case, it seemed obvious that it belonged to the so-called inoperable class, — inoperable, that is, by the usual, comparatively simple, methods. Of course it might be possible to approach the fistula from above, by abdominal incision, or indeed from below, to separate the bladder from the uterus, close the fistula, and then do the necessary plastic work on the vagina. But none of the various methods suggested by different operators, involving the separation of bladder and uterus, seemed advisable in this case, owing to the dense, cicatricial connection, and owing further to the fixation of the uterus, which greatly impeded, indeed prevented, drawing the uterus down. It was therefore decided to close the vagina, after the nature of the operation had been explained to the patient and her husband, and their consent obtained.

Operation and Result. — A denudation, one-half inch in width, was made around the vagina, the posterior border beginning high up, just below the posterior cervical lip, and the anterior just below the lower border of the fistula: the vagina was then drawn together with ten silkworm-gut sutures, so passed as to approximate the anterior and posterior walls. The convalescence was uneventful. For a time a catheter was kept in the bladder for drainage, and the bladder was occasionally irrigated. The stitches were removed in two weeks, at this time, the patient having complete control of the bladder: there was no vaginal leakage of urine after the operation. On discharge from the hospital, twenty-four days after operation, the vaginal union was firm, vesical continence complete, and although the vagina was somewhat shortened, it was of sufficient length to admit of coitus.

Comment. — Vesico-vaginal fistulae, of whatever type, are rarely seen to-day, owing, doubtless, to a better practice of obstetrics. In his earlier years, the writer saw, and operated on, a number of cases, — two in a week, on one occasion, and both cases from the same practitioner. The vesical fistula in any of its obstetric forms (of course, it may result from

chanchroidal, syphilitic, or tubercular ulceration, or from malignant disease), may be produced in two ways: first, by actual direct trauma in operative delivery; second, by pressure necrosis from unduly prolonged labor. In the first type, involuntary trickling away of urine takes place from the beginning; in the necrotic form, the escape of urine would not occur for several days, until after the slough had partly separated. Either form may be avoided by operative skill and intelligent obstetric judgment.

Some of the obstetric fistulae, when easy of approach, not too large, and involving only the vesico-vaginal septum, are comparatively easy of repair to one skilful in plastic surgery; others can be dealt with successfully, either from above or from below, by separating the bladder from the uterus; other cases still, few in number, are inoperable, unless by closing the vagina.

The operation of colpocleisis is manifestly open to certain objections:

First, fecundation is impossible: in the case above stated the woman was forty-two years old, and had had five children.

Second, coitus is possible only when the vaginal closure is high: in the case stated the closure was so made as to make coitus possible.

Third, menstrual blood, which must find its exit through the bladder, sometimes causes cystitis: the woman of forty-two has not long to menstruate.

Fourth, the contact of urine with the cervix may cause metritis: this probability seems remote.

Fifth, sometimes pyelonephritis and vesical calculus result from the stagnation and decomposition of urine in the vaginal pouch: this possibility is minimized by sloping the plastic septum towards the bladder.

Regarding the several objections, it would seem that the wishes of the patient and her husband would be the chief criterion in deciding on the course to be pursued: if they prefer sterility and more or less imperfect coitus to years of misery and discomfort on the part of the woman, surely the first two objections above stated disappear. In young women vaginal closure would be resorted to, naturally, with more

hesitation than in those near the menopause. It cannot be denied that retention of urine and menstrual blood in a vaginal pouch above the line of closure may lead to metritis, cystitis, and perhaps to calculus and surgical kidney, if the case receives neither supervision nor treatment. But menstrual blood in the bladder does not necessarily cause any ill effects, certainly none that cannot be overcome by occasional irrigation; and if, as in the writer's case, the posterior denudation is carried high on the posterior vaginal wall, so that the septum is sharply beveled towards the bladder, there is no vaginal pouch to contain residual urine or menstrual blood.

There was one interesting observation, as the patient lay in bed before operation: the sphincteric action of the vaginal introitus was such that considerable amounts of urine were retained in the vagina, which thus became a supplementary bladder; this urine was retained until active movement of the patient, or digital depression of the perineum released it, or until the vagina was considerably distended.

Ultimate Result. — The writer regrets that all efforts to trace this woman since she left the hospital have been fruitless: it is only known that she left this vicinity. The subsequent history and ultimate result cannot, therefore, be given; but from his study of the case and of the literature on the subject the writer believes that colpocleisis is a legitimate operation in cases otherwise inoperable, when accepted by the patient and her husband with a full knowledge of its consequences and possibilities; that in the performance of the operation it is important to close the vagina as high as possible, and to bevel the septum sharply towards the bladder; that it is desirable to keep the patient under occasional observation after operation, with a view to the prevention or early removal of any difficulty that may possibly arise from menstrual blood or residual urine.

CASE CXLV

A day-laborer's wife, aged thirty-five, married sixteen years, had had eight full-term labors, the first four normal, the second four with forceps delivery: the size of the several infants was not ascertainable. In her ninth pregnancy she became an out-patient of the Boston Lying-in Hospital. She took in labor at 10 A.M., but continued at the wash-tub until the early afternoon, when she summoned an externe house officer, who saw her at three o'clock, fifteen minutes after the membranes had ruptured. Recognizing an abnormal presentation the externe summoned the interne house officer, who saw the case about two hours later. He found the patient having pains every three minutes and lasting one minute; her pulse was 96. There was a contraction ring nearly at the level of the umbilicus. The pelvis was a moderately contracted justo-minor. The shoulder presented, Sc. L. P., the pulseless cord, left arm, and non-œdematous hand were prolapsed through the fully dilated os uteri. Recognizing that the patient could not properly be cared for in her home, the house officer went to a neighboring telephone station to summon an ambulance. Returning he found the woman with a pulse of 120; the uterine contractions had ceased, the contraction ring could not be felt, the prolapsed arm was somewhat drawn upward, there was rather free bleeding: obviously rupture of the uterus had occurred in this brief interval, and in not more than three hours since the rupture of the membranes.

Later Diagnosis and Treatment. — Owing to some unaccountable delay the patient did not arrive at the hospital until 8 o'clock P.M., when the writer saw her, ten hours after labor began, some five hours after rupture of the membranes, and about two hours after the spontaneous rupture of the uterus. The pulse was 130; the appearance was that of shock; the fœtal feet were easily palpable under the abdominal wall; there was no bleeding. The dead fœtus, which weighed only four and three-quarters pounds, was easily delivered by podalic version, and the placenta was removed: there was some bleeding, controlled with ice, ergot, and uterine

massage. The abdomen was then opened, while the pulse was 180. There was no blood clot or débris in the peritoneal cavity, the uterus was fairly well contracted. The uterine rent extended diagonally from well above the left broad ligament, downward close to the bladder peritoneal reflex, thence over the upper border of the right broad ligament: four fingers could be passed between bladder and uterus into the vagina: there was no rupture of large vessels. Hysterectomy was considered, but uterine suture was decided on. Deep muscular sutures of linen were passed until the bladder was reached, where it was impossible to suture the uterine muscular wall, and only the peritoneum was closed. After the usual peritoneal toilet the cavity was filled with hot saline solution, and the abdomen closed. The patient left the table with a pulse of 180. The stomach was washed out, and the usual treatment for shock and exhaustion was administered.

The morning after operation the pulse was 134, of improved quality; the temperature was 99° F., and never rose above 100.8° F. On the fourth day the temperature was normal and the pulse was 98. The patient had had no ante-partum preparation of the intestinal tract, and it was with much difficulty that the bowels were opened. On the fifth day urine and fæces were passed involuntarily, and this condition continued for four days. The woman stated that the same want of control had been present in her four preceding puerperia (all forceps deliveries), but that control was gradually recovered.

Result. — On her discharge on the twenty-eighth day, remembering that he had closed only the peritoneum between bladder and uterus, the writer was interested to examine the condition of the lower uterine musculature: through the deeply lacerated cervix he was able to introduce an exploring finger; no trace of the unsutured rent between bladder and uterus could be felt, and the uterine wall felt smooth and firm: the unsutured muscular rent had evidently closed in the process of uterine involution.

Subsequent History. — Nothing further was heard of this woman until seventeen months later, when she summoned an externe to attend her in her tenth labor. The breech was

Another point of interest in this case is its bearing on the question of the strength of uterine scars. Some writers believe that after uterine suture the scar can never be depended on; that there is great liability of rupture in subsequent pregnancy and labor; and that the existence of a uterine scar is in itself an indication for Cæsarean section. From his own observation and experience, the writer is unable to share this opinion. He can well believe that if the uterine incision becomes infected, and the patient recovers, the resulting scar may not be strong enough to bear the strain of subsequent labor, or may indeed rupture during pregnancy, as in cases wherein the uterine wall has been weakened by myomectomy; but he also believes that if a uterine rent or incision is carefully closed without infection, the resulting scar will be as strong as the wall it closes. In his experience two cases, in each of which Cæsarean section with suture had been performed three times, safely delivered themselves subsequently in normal labor. And a number of cases, after a single section, have safely delivered themselves or been delivered with forceps. Further, in more than a score of cases of repeated Cæsarean section, no weakening of the uterine wall at the site of former incisions has been observed.

Of interest in this connection is the opinion of a recent writer, that in closing rents in the uterus it is not essential to suture the musculature, that a careful closure of the peritoneum is all that is necessary. Without more confirmative experience one would hesitate to adopt this view and would naturally prefer to suture the muscular rent as well as the peritoneum, as is universally done in closing the Cæsarean incision. Still it may ultimately be proved that in the puerperal uterus the muscular rent or incision may close effectively in the process of involution. In the case above reported the writer was unable to close the uterine muscle for a space of three inches, closing only the peritoneum; and yet firm muscular union resulted, and the uterus bore the strain of subsequent labor. In one case of traumatic rupture above alluded to, in which there was no suture whatever, the woman subsequently delivered herself safely in normal labor, without uterine trauma.

CASE CXLVI

A farmer's wife of thirty-eight, the mother of several children, for three or four years had suffered with burning and itching of the vulva: she had received no satisfactory treatment, and admitted that she had rubbed and scratched the parts freely. For eight or nine months she had realized that conditions had changed; there was more pain on micturition, and there was a constant slight discharge of bloody serum. Except for this local cause of discomfort and nervous irritation she was in good health: there was no menstrual disturbance.

Diagnosis. — Physical examination revealed no evidence of abnormality except in the vulva, which gave the usual self-inflicted signs of pruritus: in the vestibule, however, there was an ulcerating area around and including the meatus, and the lower third of the urethra was indurated; there was no palpable change in the inguinal glands. The ulceration had a malignant look, there was no evidence from inquiry of venereal infection, and none of tubercular infection higher up. It seemed best to remove the visible ulceration and the indurated area on a diagnosis of probable epithelioma.

Treatment and Result. — The vestibular ulcerative area was resected about $\frac{8}{16}$ of an inch into healthy looking mucosa, and the indurated urethra was removed leaving only about a quarter of an inch: the wound was closed with fine catgut, and the short stump of the urethra left to granulate. There was a good convalescence, and rather surprisingly there was no incontinence after the second day. In three weeks the patient went to her country home with the wound healed, and with bladder control. The pathological report on the specimen was epithelioma.

Ten months later the unfortunate woman returned to Boston on account of painful inguinal swellings. She had been well for a time; but she became conscious of discomfort in the groins and noticed nodular enlargements. There was nothing to do but remove all enlarged inguinal glands, for there had been no recurrence at the site of original resection.

She again returned home, and was not again heard from; but there is no reasonable doubt of the ultimate result.

Comment. — Whatever the future may have in store as to the ætiology of cancer, there can be no doubt that irritation plays an important part: hence the necessity of timely treatment in all cases of pruritus of the external genitalia.

EPIDERMOID CARCINOMA OF THE VULVA

CASE CXLVII

A respectable English serving-maid, of Scottish ancestry, thirty-three years of age, for ten years has concealed the fact that she had on her genitalia a rough and irregular swelling, which has gradually increased in size. For the past year this mass has been bleeding, and emits a foul discharge. During this time she has lost twenty pounds in weight and is at last compelled to reveal her condition.

Diagnosis. — She was of slender build, and appeared pale and anxious, her face being noticeably pinched, her voice subdued. Her temperature was 100° F., her white count 16,000, her hæmoglobin 60 per cent: her general physical examination was otherwise normal. A fungating, papillomatous mass, the size of two fists, replaces the external genitalia, extending from symphysis pubis to anus. The surface of this mass is ulcerated, gangrenous, and sloughing, emits a foul discharge and odor, and bleeds freely on touch. A finger can barely be inserted between the lobes of this mass into the œdematous and sensitive vagina. Rectal examination shows the cervix to be small and conical; the uterus of normal size, in good position, and freely movable. Normal appendages are felt on the left, those on the right not being palpable. No deep lymph-nodes are felt in the pelvis, and the broad ligaments are soft and free from infiltration; but in both groins is a chain of nodes enlarged to the size of peas and beans, though not tender. A snipping was taken from the mass and reported " epidermoid carcinoma ".

Treatment and Result. — For two weeks the patient was kept in bed with forced nutrition, and general tonic and supportive treatment. The growth meanwhile was dressed with soft gauze applications saturated in 1 to 40 chlorinated soda solution. During this time the patient maintained constant pyrexia of about 100° F., presumably due to toxic and septic absorption from the secondarily infected sloughing mass. At the end of this period the mass was considerably cleaner, and the general condition much improved. Thereupon, under general ether anæsthesia, a complete dissection of both groins was done, followed by removal of the entire carcinomatous

mass, and a plastic closure of the gaping wound thus left. Buried catgut and superficial silkworm-gut were used.

The patient stood the operation well, but on the third day the stitches about the vaginal introitus sloughed. The wound became infected, but slowly granulated and healed. The patient had a long septic convalescence, and became much discouraged, threatening suicide. After about three weeks, however, her pyrexia abated, she began to eat voraciously, gained fifteen pounds in weight, and was discharged with the wound healed three weeks after operation.

Ultimate Result. — The patient has returned for inspection periodically for more than three years. She continues in better general health than for ten years, and there has been no recurrence of the growth.

CASE CXLVIII

A lady aged thirty-five, who had borne one child several years before, had been for some time in poor general health, and there was well-marked nervous debility: the pelvic symptoms were backache and a constant feeling of bearing down.

Diagnosis. — Vaginal examination revealed a second degree of retroversion with old adhesions, a slight laceration of the cervix requiring no treatment and two cysts of the vaginal wall. The cysts were seated, the one on the anterior wall just in front of the cervix, the other on the right posterior wall at its upper third: the size of the two cysts was about equal, that of a large horse chestnut or small hen's egg. These cysts had probably been growing for several years; but it was only in the last year or so that the patient had been conscious of some obstruction in the vagina.

It was obvious that what was most needed in this case was general treatment directed to the neurasthenic condition; and incidentally it was thought best to free the uterus, if possible, and restore it to its normal position. The cysts probably added little to the patient's discomfort, except in so far as possibly to increase the sense of weight in the pelvis and to interfere somewhat with physiological functions. It was evident, however, that their presence would interfere with measures to raise the uterus and the subsequent wearing of a pessary; and it was reasonably probable that before long they would reach such a size as to occlude the lumen of the vagina. It was therefore thought best to remove them.

Treatment and Result. — Under ether anæsthesia the cyst walls were freely laid open, there appearing to be no sac which could be dissected out. The contents of the cyst on the right posterior wall were of a thinnish, mucoid character, of a light chocolate color, and without odor: those of the cyst on the anterior wall, thick, viscid, and almost semi-solid, of albuminous color, and likewise without odor. This latter material was submitted to the examination of Dr. W. T. Councilman, who reported as follows: "Contents of cyst consist of a glairy mucus, enclosing great quantities of so-

called Drysdale's corpuscles and large leucocytes filled with fat granules. It is very probable that the cyst had an epithelial lining, and that these Drysdale's corpuscles are the nuclei of cells which have been destroyed ".

The cyst cavities were gently curetted, cleansed with Dobell's solution and weak corrosive, and lightly packed with iodoform gauze. After ten days the cavities had markedly shrunk, there was very little mucous discharge and the openings were still patent: the patient was then sent home for general treatment preparatory to dealing with the adherent retroversion.

Comment. — Mucous vaginal cysts are rare. They occur as a rule, singly, more rarely two or three at one time. The anterior wall of the vagina is the most frequent seat, the lateral wall the least common. In sixty-six per cent of the cases the cyst is situated between the middle of the vagina and the vaginal introitus, and when thus seated may simulate rectocele or cystocele: in the case above given both cysts were at the upper third of the vagina. The cysts may vary in size from that of a pea to that of the fist: isolated cases are also reported of still larger cysts; but they are usually discovered by the time they reach the size of a hen's egg. They may be superficially or deeply seated: in the above case both cysts were superficial. The contents of the cysts may be thin, resembling that of hydrocele fluid, and of reddish, brownish, greenish or chocolate color; or they may be thick, viscid and albuminous.

Opinion is still divided as to the existence of glands in the vaginal wall; but the weight of authority seems to be that in all probability there are no true glands, but what are called vaginal crypts. Vaginal cysts are probably not, therefore, retention cysts properly so-called, like wens or cysts of Bartholin's glands, but are developed in the vaginal crypts, which are lined with flattened epithelium, and which have in some way become occluded, either by inflammatory processes or by epithelial plugs.

Vaginal cysts, as a rule, grow very slowly, and when small cause no symptoms: small cysts are therefore discovered only by accident. Large cysts may cause uterine displace-

ments, may interfere with the bladder or rectum and cause various pressure symptoms, may make coitus difficult or impossible, and, when seated low, may protrude from the vagina and cause discomfort: they may also constitute an obstruction in labor.

The best treatment of vaginal cysts of any size is undoubtedly enucleation; but this is often difficult or impossible when the cyst wall is thin or the cyst is deeply seated. In such cases free incision and evacuation is the most reliable measure, followed by curetting and packing with iodoform gauze: it is well also to excise a small portion of the cyst wall to prevent closure of the incision after the patient has passed from observation.

These tumors should be recognized without difficulty; but Winckel pointed out that they may be mistaken for cystocele, rectocele or small ovarian cysts. Careful examination, however, will usually remove all doubt, and doubtful cases should be aspirated before incision. In large cysts there is well-marked fluctuation.

CASE CXLIX

A healthy looking woman of thirty-six, unmarried, a cook by occupation, began to menstruate at fourteen, and had always been regular: the flow had never been profuse, and had lasted only two or three days. The woman had always been well and vigorous until within a month or six weeks, when she began to have pain in the lower part of the abdomen: this was absolutely her only symptom, and for the relief of this she entered the writer's hospital clinic October 20.

Diagnosis. — Physical examination revealed nothing abnormal except for a smooth, hard, symmetrical, rounded abdominal tumor rising from the pelvis to two fingers' breadth above the umbilicus: (the patient had not noticed this tumor, as large as a seven months' pregnancy). The hymen was intact, barely admitting one finger: the cervix, small, conical, and high in the pelvis. Passage of a catheter insured an empty bladder, and it was clear from bimanual palpation that the uterus constituted the tumor above described: no fœtal parts could be felt, no fœtal heart heard; the tumor was hard in consistency. The temperature was normal. The diagnosis of fibroid uterus seemed certain.

Treatment and Result. — After a week's rest in bed, and careful bowel preparation, the abdomen was opened on October 26. The uterus was found to be a fibroid mass, and was removed, with the normal appendages, by supravaginal hysterectomy: the cervical canal was cauterized with carbolic acid, and the stump buried beneath peritoneum: the abdomen was closed in layers without drainage. On laying open the specimen after removal it was seen to consist of many interstitial fibroids of varying size; none was subserous or submucous: the uterine cavity was small and quite empty: microscopically there was no evidence of malignancy.

The patient had a normal convalescence for a week: she then developed a moderate fever, with tenderness in the left calf and along the course of the long, internal saphenous vein, which could be felt as a subcutaneous cord. Ice was applied, and for three weeks the woman ran an irregular, slightly elevated temperature, never above 101° F. The phlebitis

gradually subsided, and the patient was discharged well, and with an empty pelvis, on December 3.

Comment. — The indication for operation in this case was pain, — one of the four conservatively recognized indications: size alone would have been no reason for operating, for, strange as it may seem, the patient had not noticed it. The fact that there had been no menorrhagia or metrorrhagia is explainable from the fact that all the fibroid growths were interstitial; none had approached the endometrium. Before the operation was performed the patient was well rested: except in emergencies, surgery should never be done on tired bodies.

CASE CL

A New England woman of forty, married twenty years, was referred by the Superintendent of a hospital for the insane in another State for an opinion. The lady's marriage had not proved a happy one, owing apparently to mutual incompatibility in temperament; but she became pregnant, nevertheless, seven years previous to the desired consultation. Unwilling to bear this child to her unloved husband, she had a criminal induction at the third to fourth month, said to have been done by air insufflation. Prior to this she had menstruated fairly regularly every four weeks, but had been a victim to membranaceous dysmenorrhœa, the pain and passage of shreds lasting three or four days. She was infected at the time of her abortion, but survived in a much prostrated condition. Since the abortion, the menstrual pain was much less, and the passage of membranous shreds had practically disappeared; but the periods now fell four or five days short of the four weeks cycle, and although she flowed only three or four days she passed numerous small clots. Seeking relief from the marked prostration and melancholia following her induced abortion, she had voluntarily placed herself in an asylum for such cases, but not improving she had later become an inmate of a State Hospital for the Insane: this was three years prior to this consultation. She remained in this institution over a year, at times very nervous and depressed, at times in apparently a happy frame of mind, but usually in a state of melancholia and apprehension about her health: she said she had a feeling of pressure and weight in the abdomen, and at times pains in her head and back. Finally, after some thirteen months, she was discharged as recovered from her psychosis, and at that time appeared very well indeed.

Four months later she was re-admitted with many of the old symptoms, — marked depression and hypochondriasis, and now she felt homicidal inclinations towards husband and friends at home. She was sent to the writer something over a year later for examination and opinion.

Diagnosis. — No physical anomaly was found except with the pelvic organs. An irregular, tender, hard, lobulated mass rose from the pelvis half way to the umbilicus, and was apparently a multiple fibro-myoma of the uterus: the appendages could not be made out; but it was suspected that the tumor was partly made up of inflammatory mass resulting from the infection at the time of the induced abortion. The physical findings gave an adequate explanation of the sense of weight, pressure, backache, and menstrual disturbance of which the patient had complained for some time. Abdominal operation was advised for the removal of the neoplasm, and perhaps of the appendages, in the hope of benefiting the mental condition as well as removing the evident cause of her physical ailments.

Operation and Result. — This advice was accepted, and three months later the abdomen was opened. To the writer's surprise the tubes and ovaries were normal; the tumor was simply a multiple myoma: classic supra-vaginal hysterectomy was done, and as the patient was forty years of age it was thought best to remove the tubes and ovaries also. During the normal convalescence there were no symptoms of mental disturbance, and the patient was discharged well, with a pelvis free from post-operative exudate.

Pathological Report. — Myoma.

Subsequent History. — The lady returned to the State Institution whence she came, and the Superintendent writes of her subsequent history as follows: "On her return to my care her general condition was very good; but she still showed a good many of her old neurasthenic and hypochondriacal symptoms: these alternated with feelings of general contentment. The impression, however, was that her general physical condition and mental state were benefited by the operation. She was discharged sixteen months later as recovered, being in a very normal mental condition. She was re-admitted some three years later, coming voluntarily. The history at this time was that she had been growing more nervous and melancholy, and thought the change of going to the Hospital might be beneficial. She looked remarkably well, and appeared perfectly clear in mind, her main symptom

being one of hypochondriasis. She rather enjoyed narrating her troubles, and seemed always to be glad to spend much time in telling others how much she suffered: aside from this, she seemed absolutely clear mentally. This time she remained in hospital thirteen months, going home five years ago. I had a lurking suspicion that she did not wish to go home because she did not care to live with her husband, who was an invalid, and incompatible with her in temperament; and the last year of her being here I felt that many of her symptoms she exaggerated in the hope that she might continue living here. She was very comfortable and contented, and never expressed any great discontent, except when it was suggested that she might be able to return home. She gained in weight, and we felt convinced that she was not insane, but rather weak willed and possessed of no stability of purpose. This we thought was a fundamental condition with her. On the whole we considered that she had recovered from the extreme hypochondriasis with which she had suffered during her first two commitments, and that the operation had been of distinct benefit to her, in that it had relieved her from the one real pathological condition from which she was suffering ".

Comment. — This case is thus given *in extenso* to remind the young gynæcologist that besides the often largely mechanical work of the surgeon there is frequently to be considered, in the restoration to health, " the mind " and will " diseased ". Surgery will often help, often cure; but a wider view is sometimes necessary in dealing with poor human nature. Unhappy marriage plays an important part in many gynæcologic and neuro-pathologic conditions, and no eugenic law has yet been enacted to prevent or ameliorate them.

CASE CLI

An unmarried cook of thirty-five had always been in excellent health. Her catamenia were regular and normal in the amount of flowing until September, when she began to notice an increase in the quantity of blood passed. Her periods now recurred every fortnight. On December 21 and 23 she had profuse hæmorrhages: there was no pain or any other symptom to attract her attention. There had been no appreciable loss of weight. She entered the writer's hospital clinic on December 25, to seek explanation of, and relief from, her abnormal flowing.

Diagnosis. — After a night's rest in bed the patient did not appear noticeably pale. Her hæmoglobin was 85 per cent. Her general physical examination was normal, except for the presence of a slight, bloody, vaginal discharge. The hymen was intact, the introitus admitting only one finger: the cervix was small; the uterus of normal size, but retroverted; the ovaries slightly sensitive, but not enlarged; the tubes were not palpable. Both submucous fibroid or polyp and early carcinoma of the uterine body were considered as diagnoses, the former being far more probable. A diagnostic curettage was therefore advised and accepted.

Treatment and Result. — At this operation a considerable amount of very friable tissue was removed from the uterus, which on microscopic examination proved to be adeno-carcinoma. The nature of her disease was explained to the patient and a further radical operation advised.

On January 10, after a fortnight of careful preparation by rest in bed, tonics, and feeding, a panhysterectomy was done by the combined vagino-abdominal route. The abdomen was closed in layers without drainage, the vagina packed and drained from below, the patient being kept in Fowler's position and the vaginal wicks removed gradually as granulation progressed. On section the specimen presented an eroded, fungating area, the size of a shilling on the posterior wall of the uterus, about midway between the internal os and the fundus. Pathologic report on sections from this area was adeno-carcinoma.

The patient had an uneventful convalescence and was discharged on February 3. She spent a year abroad; and at the end of that time returned in excellent health, apparently free from recurrence, and resumed work.

Ultimate Result. — Another year and a half have elapsed (two years and a half since operation) and there is no sign of recurrence.

Comment. — Corporeal uterine cancer is rare in women of thirty-five; and aside from complications of pregnancy, one would generally suspect metrorrhagia to be due to uterine myoma in some form. In this particular case the hæmorrhage might well have been due to the retroversion with coincident endometrial changes: the writer recalls a private case, twenty years ago, in which cancer was suspected; but the report on the half-ounce of uterine scrapings was hyperplastic endometritis, and the patient is alive and well to-day. No one can pass judgment on a non-pregnant case of uterine bleeding without a careful curettage and a microscopic examination of the scrapings.

CASE CLII

A housewife, aged thirty-eight, had had six full-term, normal labors, the last, five months prior to her visit. She sought advice on account of an abdominal tumor which she had first noticed a month or two after her last puerperium; during these three or four months she had observed that the tumor was growing larger. The menstrual periods were normal, and she complained of no symptoms except constipation.

Diagnosis. — The uterus was found to be of normal size and in normal axis; in the right lower quadrant was a movable tumor, estimated to be five to six inches in diameter, and apparently a unilocular cyst of the right ovary.

Treatment and Result. — On exposing the tumor at operation four days later, it was found to have made one complete axial rotation; the tube was enlarged and adherent over the cyst. There were no adhesions whatever, and the tumor was untwisted and removed without tapping. The convalescence was uneventful.

The cyst had a thick wall, measured 18 cm. in diameter, was of purple color, and contained thick, dark-brown fluid. Along one side was a pear-shaped thickening, 12 cm. long, made up of small cavities filled with rather soft, red tissue and clotted blood.

Comment. — The case represents one of the simpler types of axial rotation. The twisting of the pedicle was obviously a gradual one, and therefore gave rise to no sudden or painful symptoms. While there was enough obstruction to circulation to cause passive congestion, moderate intra-cystic hæmorrhage, and gradual enlargement of the tumor, there was not enough torsion to lead to strangulation, adhesions, or degenerative changes. As to the cause of the rotation in this case, we have present two of the factors mentioned as possible causes, namely, pregnancy, and the pear-shaped thickening along one side of the cyst, which may have been effective in producing disturbance of equilibrium. Incidentally it may be mentioned that the left ovary in this case contained a hæmorrhagic cyst twice the size of a normal ovary; but the tumor was too small to have played any part in the rotation of the other ovary, and was not itself rotated. This left ovary was resected and with its tube left *in situ*.

CASE CLIII

A stenographer, aged twenty-five, married two years, but never pregnant, one week before the first visit was suddenly seized with pain in the left lower quadrant; the pain was steady in character and had persisted since the invasion. She began to flow on the fourth day, less than three weeks after her last preceding period. The abdomen had grown larger within the past three days. There had been no vomiting or chills; pulse 110, temperature 101.2° F.

Diagnosis. — The cervix was crowded low in the pelvis, the fundus was not made out. The hypogastrium was filled with a rounded, symmetrical tumor rising to the umbilicus, flat on percussion, with tympany in the flanks, and with marked fluctuation wave, apparently a unilocular cyst of the left ovary.

Treatment and Result. — Operation the following day revealed a dark, congested-looking tumor of the left ovary, with an axial rotation of 180°. The cyst was lightly adherent in many places, and firmly adherent over its posterior wall. It was at first hoped to deliver the tumor intact; but the twisted pedicle was not easily accessible owing to adhesions, and the cyst was therefore emptied of three pints of dark red fluid. The left broad ligament was then tied off, and as the adhesions were so dense as to endanger the bowel by forcible separation, the outer layer of the cyst was incised and the tumor enucleated. The left tube was not recognized. The right tube was the seat of a chronic process and evidently contained pus; the right ovary cystic. This tube and ovary were removed without rupture, but some of the contents of the strangulated left cyst had been spilled into the pelvis, and there was considerable oozing from the separated adhesions; a gauze pressure-drain was therefore placed behind each broad ligament. The drains were started on the fourth day; the convalescence proceeded uneventfully, but was protracted to between seven and eight weeks by the infection of the lower half of the incision.

The right tube was 15 cm. in length, fluctuant, much dilated, tortuous, varying from 1 to 3 cm. in diameter, and

filled with thick, bloody, purulent fluid containing pus cells and Gram-staining bacilli in chains and clumps. The right ovary was practically made up of a thin, translucent cyst, 5 cm. in diameter, with a small amount of apparently normal ovarian tissue at one side. Whether this tubo-ovarian mass could have had any effective influence in causing the rotation of the larger cyst on the other side is a matter of speculation. The collapsed cyst of the left ovary was about 15 cm. in diameter, with a smooth, dark red outer surface and tough fibrous wall. The inner surface was lined with a greasy, grayish-white, friable pseudo-membrane, in which the *bacillus proteus vulgaris* was found. Comparing these pathological conditions with the symptoms of the case, it seems obvious that this was an instance of rapid torsion, attended by acute enlargement of the cyst, the formation of adhesions and the rapid development of necrotic changes.

CASE CLIV

A healthy looking blonde, aged twenty-nine, had had, six years before, a normal, full-term labor, with afebrile convalescence. For the past six months she had had more or less pain low down on the right side, and had noticed a "swelling" in this region for the last few months; otherwise she had been in good health.

Diagnosis. — The abdomen was enlarged by a tumor reaching to the umbilicus and extending somewhat more towards the right than to the left. The abdominal wall was so thick that no fluctuation wave could be made out; but the tumor did not feel as hard as a fibroid. The uterus was in normal axis and of normal depth. The abdomen was opened with a presumptive diagnosis of cyst of the right ovary, with a possibility of fibroid.

Treatment and Result. — A thick-walled cyst of the right ovary was found, adherent over its entire surface. The pedicle was much thickened and twisted, but the writer did not take time to determine the number of rotations. The wall was so thick that it had to be incised before the trocar would enter; the contents were too thick to flow through the trocar, being of a mushy, hasty-pudding character and containing hair; they were therefore expressed and none allowed to escape into the abdomen. The cyst was drawn up as the posterior omental adhesions were separated, and the thick, twisted pedicle plaited off. The left ovary was enlarged to two and a half inches and cystic, and was also removed. The pelvis was found to contain a considerable amount of material similar to the contents of the dermoid cyst, and at the time it was not apparent how it came there, in view of the fact that none was spilled when the cyst was emptied. The cavity was cleansed and drained and the abdomen closed. The patient made a good ether recovery, but the pulse rose to 150 on the night after operation. There was some abdominal pain and moderate distention, relieved by enemata; the abdomen was always soft and not tender. The temperature had risen to 101° F. on the second day, with pulse at 160, and the patient died, apparently of shock, on the third day.

The cyst measured 22 by 18 cm.; color reddish gray. On one side a thick pedicle with injected vessels and thickened walls. The whole surface of the cyst was roughened by adhesions, and the wall was 0.4 to 1.5 cm. in thickness. The cavity was filled with soft, yellowish, fatty material, showing cholesterin crystals, and imbedded in this material were several balls of very coarse, golden-yellow hair; no bone or teeth were found. On what was, at the time of operation, the posterior surface of this cyst was a smaller cyst containing a thick mass of inspissated material, but no hair. On the discovery of this subsidiary cyst, the presence of the material found free in the pelvis and above alluded to seemed adequately to be accounted for. It seemed evident that this smaller cyst had originally contained the material, and had ruptured long enough before operation for the opening to have closed before removal, or to have escaped detection afterwards. Pathological diagnosis: Dermoid cyst, with necrosis and inflammation.

Comment. — All authorities agree that "dermoid cysts are more likely to undergo axial rotation than other ovarian tumors, and hence twisting of the pedicle is comparatively frequent in this variety of cystic growth". It has also been shown clinically that in four-fifths of the cases of axial rotation, "the tumor is either polycystic, solid, or dermoid, that is, presumably, of more or less irregular outline and varying weight, the irregularities affording convenient points for the exercise of the force needed to produce rotation, and the varying weight tending to produce disturbance of equilibrium".

SECTION IV

THE CLIMACTERIC

THE CLIMACTERIC

This second critical period in woman's life, marking the cessation of procreative function, is usually observed between the forty-fifth and fiftieth years; yet for reasons not always obvious it sometimes begins as early as the fortieth, or as late as the fifty-second year: occurring earlier or later respectively, it must be regarded as abnormal, whether by reason of heredity or of pathological conditions. Contrary to what might rationally be expected late puberty is usually followed by early menopause, and early puberty by late menstrual cessation. Like the period of puberty, the climacteric should not be regarded as a pathological epoch; normally, menstrual life should cease as it began, physiologically, and be followed by the normal atrophic, anatomic changes and the allotted years of sexual serenity and enjoyment of life's Indian summer: such is the case in those fortunate women, of good heredity, who have been well cared for in life's journey. But the climacteric is a period of serious possibilities: aside from the handicaps of inheritance, psychical and physical, woman may have to face the consequences of earlier infections, traumatisms, and neoplasms, the long continued and accumulated strain of bearing and rearing children, and the cares, labors, and responsibilities of family and society life; — she reaches port from a long, eventful, and storm-tossed voyage, and often needs overhauling and refitting before subsequent harbor or coastwise service.

1. Functional Disturbances

Under normal conditions the catamenia usually cease gradually; the flow may be scantier during the usual time, or it may be concluded in fewer days. Often the periods are irregular, exciting hopes of pregnancy in late, sterile marriages; sometimes the function is in abeyance during the winter season, and pursues its normal course in the summer: these varying flickerings of the dying candle may continue during

several years. During these years there may be various psychical aberrations, — mental depressions, emotional explosions, or other evidences of impaired control, accompanied by the hot flushes and perspirations of vaso-motor disturbances. On the other hand, while there may be protracted or excessive menstrual flow without apparent pathologic cause, this phenomenon is often due to serious inflammatory or neoplastic conditions, and should incite the investigation of the observant family physician. The capricious, emotional, psychical vagaries and mental depressions, too, of the woman who reluctantly believes that she is losing her womanhood when she ceases to menstruate, sometimes result in melancholia and other serious psychic disturbances, which call for watchful prophylaxis and patient treatment. Incidentally it should be remembered that the menopause not infrequently brings relief or even vigorous health to women who have suffered from unrelieved menstrual pain and from the varying symptoms of pelvic infection and uterine displacements: non-malignant neoplasms may cease to grow or may participate in physiological atrophic changes. Altogether there is reason for hope and encouragement to many suffering matrons as they near the physiologic terminal station in the " long walk ".

2. Malformations and Displacements

The former, if remediable, should have been corrected in earlier life; the latter persist from neglected or unsuccessful treatment. As previously intimated, certain troublesome displacements of earlier life, — prolapsed ovaries, retrodisplaced uteri, from atrophic changes and diminished blood supply cease to cause symptoms; but the varying degrees of genital hernia, from the progressive loss of muscular tone, may increase in severity: external friction may result in abrasion, infection and ulceration may ensue, and disturbances of rectal and vesical function may be greatly increased. Unfortunately some women thus afflicted are not in a general condition to warrant extensive plastic operations; but symptomatic relief may often be afforded by the use of local medication and of soft rubber inflatable pessaries.

3. Infections

While the results of untreated earlier infections may persist and call for palliative or radical surgical treatment, primary infections are relatively rare during this period. Venereal infections are still possible from errant husbands or by innocent accidental causes; otherwise woman in this transition period of her life should be exempt from pelvic infection. Pruritus of the vulva, often of uncertain ætiology, is not infrequently observed during this period.

4. Traumata

Aside from the always possible accidental injuries and criminal, sexual assault, woman at this period of her life should incur no genital trauma. She may, however, at this time first realize the existence of the results of puerperal injury, to which reference has already been made.

5. Neoplasms

Any of the new-growths incident to the period of maturity may first appear during the climacteric, or they may have been kept under observation, and surgical treatment deferred until after menstrual cessation. Uterine myomata causing no urgent symptoms may have been allowed to remain until it should be seen whether the atrophic sexual changes might not result in cessation of growth or even diminution in size. Any of the forms of ovarian cysts, small and without symptoms, may take on more rapid growth, excite suspicion of malignant degeneration, and lead the hitherto unwilling patient to submit to operation. Urethral angiomata, under long irritation from concentrated urine, may now first cause distressing symptoms, and malignant new-growths of the vulva may now first appear. But by far the most frequent and disastrous neoplasm of the climacteric is carcinoma of the cervix; although this growth may appear at any time from childhood to old age, it is most frequently observed between the ages of forty and fifty. Unlike primary cancer of the uterine body, cancer of the cervix, whether of squamous cell or of cylindrical cell origin, extends rapidly, and unless met by early diagnosis

and timely hysterectomy soon advances beyond hope of radical cure. Its beginning is insidious, and the only early signs may be a slightly blood-tinged leucorrhœa or "spotting", perhaps appearing only after coitus or after contact with a vaginal douche-nozzle, and a slight increase of the menstrual flow. Primary cervical cancer is practically unknown in nulliparous women, and therefore early vaginal examination in a suspected case will perhaps reveal only what appears to be a torn cervix with eversion, erosion, possibly some induration and so-called cystic degeneration; or, there may be seen and felt only a somewhat nodular, indurated enlargement of the cervix, with perhaps a moderate cervical discharge. In either event there may be a beginning malignant process; or there may be simply superficial erosion of a torn cervix, with scar tissue and retention cysts of Nabothian glands. A tyro can accurately diagnosticate cervical cancer in somewhat later stages, when there are friability of tissue, ready bleeding on touch, or loss of substance with copious discharge; but it is of the greatest importance with a view to effective treatment that accurate diagnosis should be made early. By expert sight and touch early diagnosis can easily be made in most instances; but in doubtful cases resort may be had to the therapeutic diagnosis, a few local treatments causing rapid improvement in a non-malignant torn cervix, while no topical application will arrest a malignant process already begun: or, immediate resort may be had to microscopic diagnosis, for which purpose a wedge-shaped piece should be excised.

It has earlier been stated that not every case of torn cervix needs to be repaired, certainly not during functional maturity; this statement does not gainsay the fact that even during maturity some deep lacerations do show signs and symptoms, which call for trachelorrhaphy or amputation even when there is no suspicion of beginning malignity. But when a parous matron reaches the end of her functional journey with a torn cervix, the cervix should either be repaired, if symptoms and appearances warrant, or should be kept under observation. We seek to save our teeth, not only by faithful personal care, but by periodical inspections by the dentist. Is it not worth

while, in view of the great frequency with which cervical cancer is found to be inoperable when first seen, that women in the climacteric with torn cervices should be instructed to report, at intervals of not more than six months, for examination by their responsible physician?

A word should be said in regard to plainly inoperable cases of cancer, cases in which complete removal is beyond even sanguine hope. Too often such cases, especially among the poor, are abandoned to their miserable fate. It should be more fully realized that much can be done, whether by partial removal, curettage and cauterization, or by topical applications, to mitigate suffering, check hæmorrhage and offensive discharges, and prolong life.

CASE CLV

A multipara sixty years of age, for ten years a widow, came from another State to seek relief from prolapse of the uterus and vagina, which began to protrude twenty years before and for ten years had been outside the genital fissure. She complained of pain in the head and back, was unable to walk, stand, or sit without pain and discomfort in the prolapsed parts, and was comfortable only when lying down. Her general condition was fairly good; but her nerves were in a measure unstrung by discomfort and pain. Defæcation was always difficult: urination was frequent and sometimes painful on account of the prolapse of the bladder.

Diagnosis. — The perineum was torn to the sphincter, and the perineal body gone; the vagina was subinvoluted, thickened, and entirely prolapsed; the uterus was external to the vulva, enlarged, the cavity measuring four and a half inches; the cervix and vaginal wall were the seat of many abrasions and ulcerations.

Treatment and Result. — Uterus and vagina were replaced, and retained with tampons, the patient remaining in bed; a ten per cent solution of silver nitrate and a twelve and a half per cent solution of tannin in glycerine were used to heal the abrasions. In less than three weeks the depth of the uterus was reduced an inch. The choice for further treatment lay between pessary, extensive plastic operation, and hysterectomy with closure of the vagina. Pessary treatment was thought inadvisable in a woman only sixty, who looked forward to ten or more years of activity, particularly as she lived remote from special medical care; moreover, it was thought doubtful that a soft rubber pessary would support so large a uterus in a woman who would be much on her feet, unless plastic work were done on the vagina: the use of the hard, cup-and-stem pessary, the kind bought at the village store and worn by so many country women, was not to be thought of. Plastic repair was the treatment chosen; and with a view to avoiding a long etherization in a woman of sixty, it was decided to do the work at two sittings. At the first operation an extensive anterior colporrhaphy was done:

GENITAL HERNIA

three mattress sutures of catgut were first applied, thus securing attachment to the triangular ligament, greatly narrowing the denuded elliptical area, and relieving the tension on the superficial stitches, which were of silver wire. During convalescence the anterior wall was supported with pads of sterile gauze, and it was directed that the bedpan should be used every four hours to avoid overdistention of the bladder. The wire sutures were removed on the tenth day. Two weeks were allowed to elapse before the second operation, an extensive colpo-perineorrhaphy by Hegar's method. The denudation was carried well up the posterior and lateral walls, and was closed with catgut within, and silver wire without, the vagina, thereby narrowing the vagina and building up a large perineal body. During this second convalescence the patient had considerable nervous disturbance with hallucinations, and several times got out of bed in the temporary absence of the nurse; but on the removal of the wire sutures on the thirteenth day it was found that there was good union except at the external base of the perineal triangle, where the stitches had cut in somewhat, probably from having been twisted too tightly: these stitch-cuts subsequently granulated in.

Ten weeks later the patient presented herself for office inspection, happy in entire relief. Examination showed a firm perineal body, the vagina would admit only the index finger, and the lightened uterus was high in the pelvis. She then returned to her distant home, and there is no proof that the result obtained was permanent; but apart from the probability that word would have come had the prolapse returned, it seemed hardly possible with the vagina narrowed to the size of the index finger, the uterus diminished in size and weight and under favorable conditions for undergoing senile atrophy, that the uterine and vaginal hernia could recur.

Comment. — In most cases anterior colporrhaphy and colpo-perineorrhaphy, indeed with the addition of curettage, cervical repair or amputation, and perhaps uterine fixation, are done at one sitting, especially in younger women. But aside from the prudence of shorter, even if repeated, anæsthesia in older women, there are advantages in the divided operation.

In the first place it permits the use of non-absorbable sutures in the anterior vaginal wall, and some operators get better results from the use of silver wire in colporrhaphy, as in the closure of vesico-vaginal fistulae: moreover, the longer time taken for the work ensures a better involution of the uterus, and permits more satisfactory attention to general conditions of ill-health, when they exist, and to the restoration of a disturbed and shaken nervous system so often present in these cases.

CASE CLVI

A virgin fifty years of age, in comfortable circumstances, and of no special employment, seeks advice for intolerable itching of the vulva, which had troubled her for a year. Her sense of modesty had deterred her hitherto from consulting a physician; but recently she had attended a public medical lecture, and had become so alarmed over the possibilities of cancer that she comes for diagnosis and relief.

Diagnosis. — Inspection revealed some reddening of the labia, and some linear evidences of scratching, but no other lesions. She had already, several years before, ceased to menstruate, and since then had had no vaginal discharge whatever. The urine contained no sugar, and was not concentrated: there was no dysuria. The general health was very good, and there was no evident cause for the itching; so it was conveniently regarded as a neurosis.

Treatment and Result. — As the woman was so nervous, and as her sleep had been disturbed by the vulval irritation, it was at first thought advisable to prescribe a bromide, but finally decided to hold this in reserve until local treatment alone had been tried. The prescriptions were carbolic acid one dram in lime water one pint, and black wash; and the directions were as follows: Whenever and as often as there is any itching, day or night, sop the parts freely with the carbolized lime water until the itching abates; on no account rub or scratch the labia; use this lotion the last thing before going to bed after emptying the bladder, and then cover the vulva with a gauze compress wetted with the carbolic lotion: three times during the day apply the black wash for fifteen minutes at a time. Three weeks later the patient reported herself as much improved, and was advised to continue the same treatment: several months afterwards she wrote, " I am entirely well of the fearful and alarming malady ".

Comment. — Success in the treatment of these fairly common cases of pruritus depends very largely, as in so many other affections, on the co-operation of the patient, who cannot, however, be expected to desist from scratching, unless provided with some other means of stopping the intolerable

itching: used faithfully and with sufficient frequency the above-mentioned lotions will do this. As above intimated bromides are often useful to allay nervous irritability. Of course when the pruritus is attributable to vaginal discharges or to abnormal urine the conditions giving rise to them must be coincidently treated.

CASE CLVII

An unmarried woman of forty-four, a lady's companion and housekeeper, complains of intolerable itching of the vulva, and says there are sores on the labia and mons which occasionally give out a discharge, matting the pubic hair together, and giving her a sense of great uncleanness. She has had this trouble for months, in spite of treatment; sleep is more or less disturbed, and she is often very nervous: otherwise her health is good. She has begun to " skip " in her menstruation.

Diagnosis. — Investigation disclosed nothing wrong with the urine, and there was no vaginal discharge; no pediculi could be found. Scattered over the mons and the cutaneous surface of the labia majora were small, discrete pustules which gave off a sero-purulent discharge, which oozed into the rather long hair and made the parts hard to keep clean. It seemed obviously a case of pustular eczema, perhaps starting as a follicular vulvitis, and becoming pustular.

Treatment and Result. — It was learned on inquiry that the woman's mistress was given to rather good living, and was fond of spiced and highly seasoned food; the house-keeping companion shared the same table: advice was therefore given for simplicity of diet. To facilitate topical treatment it was directed that the vulval hair should be clipped short, and the usual strict advice was given as to rubbing or scratching. To alleviate itching, frequent applications of dram to the pint carbolic acid and lime water were enjoined, and the use of a compress moistened with the same placed over the vulva at night: after each use of the wash the pustules were to be smeared with lanolin combined with boric acid four per cent. In the next two weeks there was marked improvement: the following prescription, taken from Dudley's Gynæcology, was then substituted for the borated lanolin:

Ointment of rose water	℥i
Lanolin	℥ii
Oxide of zinc	℥i
Boric acid	℥i
Ammoniated ichthyol	gr. xl
Thymol	gr. v

Nineteen days later there were very few pustules to be seen, and itching had much abated: black wash was given, to be applied three times a day, before the above mentioned ointment. Three weeks later the woman discharged herself, well.

Comment. — There is an extensive variety of washes and ointments recommended by dermatologists for such cases. Perhaps success depends quite as much on the self-control and intelligent co-operation of the patient as on the choice of medication: the keynote is the selection of a means to stop the itching and thus to remove all temptation to rub or scratch the affected parts.

CASE CLVIII

A quadripara, forty-five years of age, came under the writer's care on the death of her longtime medical adviser. She was wearing a pessary to support a heavy, procident uterus: she was in general good health, but came for the customary cleansing and inspection of her pessary. Menstruation at this time was regular and normal.

Diagnosis and Treatment. — Assuming that the lady had had a prolapsed and doubtless retroverted uterus, and that she was made comfortable by pessary support, there was no reason to do otherwise than cleanse and replace the well-fitted pessary; but it was observed that the cervix uteri was deeply torn bilaterally, and while there was no erosion there were marked eversion and hyperplasia. There were also many retention cysts of the Nabothian glands: these were opened and disinfected with strong tincture of iodine. Six months later the cervix was reddened and congested: a large cyst was evacuated and iodined, and bi-daily depleting hot-water vaginal douches were advised. These with several subsequent applications of iodine, and glycerine wool-tampons, somewhat reduced the size of the cervix and relieved the sense of pelvic weight; but the cervix was one which seemed to invite carcinomatous degeneration, and surgical treatment was advised. Accordingly, several months later, a partial amputation of the cervix, after Schröder's method, was performed: the specimen showed no evidence of cancer. After an excellent convalescence the patient was unwilling to go home without her pessary, fearing that she would miss its support; but six months later she was persuaded to its removal on trial, and the much less heavy uterus did not again descend.

Result. — This case was followed for eight years after operation, while the menstrual function gradually flickered out. There were occasional periods of backache from overexertion; but the lady was able to walk, play golf, and enjoy her family life, and thus gradually passed through the menopause to a healthy and serene Indian summer.

Comment. — In the light of what has already been said no comment is necessary, except to emphasize the fact that,

if cervical cancer is to be prevented, previously unrepaired lacerations must be watched, and when the cervix is cystic and hyperplastic, often heavy and procident, and sometimes the seat of erosion, it is wise to amputate, and remove a lurking danger.

CASE CLIX

A secundipara of fifty-one had apparently passed the menopause, and was in good general health; but for ten years she had noticed a swelling on what she supposed was the neck of the womb. This swelling had grown steadily; but there had been no flowing or leucorrhœa for some years. She was led to seek advice on account of frequent and painful micturition: there was no other complaint.

Diagnosis. — On physical examination a solid rounded tumor of hen's egg size was found, which on first examination was thought to be an enlarged anterior cervical lip; but under anæsthesia the growth was found to be entirely free from the cervix, and sessile on the anterior vaginal wall. In spite of its rarity the neoplasm was thought to be a vaginal myoma.

Treatment and Result. — The capsule was incised and the tumor enucleated from its bed; only one bleeding point needed ligature. The superfluous edges of the capsule were trimmed off: the close proximity of the bladder caused hesitancy in applying sutures, the bed of the tumor therefore was dressed with gauze, and left to granulate. The woman went home with the vagina healed on the 26th day. The pathologist's report was fibro-myoma.

Comment. — These rare neoplasms may have their origin from the uterus and descend little by little, dissecting their way between the layers of the recto-vaginal septum; or they may arise primarily from the muscular vaginal coat, in which case they are more likely to be in the upper part of the anterior wall: they may be very adherent to the urethra, and may cause frequent and painful micturition. Their size is usually small, but a case has been reported in which the tumor filled the entire pelvis and pushed up the uterus. They may become pedunculated, and may undergo the same degenerative changes as analogous uterine growths; they may simulate carcinoma. They may be found in childhood, but more usually are discovered in maturity, when they may be of sufficient size to interfere with coitus, cause dystocia, or give rise to bladder symptoms.

CASE CLX

A French lady of forty-nine, who had married at seventeen and borne four children besides miscarrying three times, comes from another State for relief from uterine hæmorrhage. She had always been in good health, and suffered now only from anæmia and prostration due to the loss of blood she had sustained during the past year or more. She thought she ought to have ceased to menstruate by this time; but she flowed more profusely than formerly at each recurring period, and also had occasional hæmorrhages at other times.

Diagnosis. — With this history in a multiparous woman of forty-nine one would think sooner of cervical carcinoma than of fibroid, except for the fact that in this case the bleeding has lasted so long without the necrotic changes which would surely have supervened by this time in a case of cervical cancer of over a year's standing. As expected, examination revealed a myoma, the size of a tennis ball, presenting in the dilated cervix: except moderate traumata of labor no other pelvic anomaly was found.

Treatment and Result. — As the patient had a functional cardiac murmur, and the hæmoglobin test showed only 65 per cent, it was thought wise to improve the general condition with rest, food, iron, and digitalis before operating. In eight days the hæmoglobin had risen to 72 per cent, and the patient felt much stronger. Under ether anæsthesia the fibroid was then removed, and the uterus curetted of a considerable amount of hyperplastic endometrium: the uterine cavity was irrigated, dried, swabbed with iodine, and left packed with gauze. The gauze was removed next day, and bi-daily, hot, sterile douches given. The convalescence was uneventful, and the lady returned to her home after ten days.

Comment. — Of course the low attached, pedunculated fibroids are easy of removal; but when sessile over a relatively large surface the tumor sometimes requires morcellation, although enucleation may be possible. The pedunculated fibroid is liable to undergo necrosis from torsion of its pedicle or other cause of insufficient blood supply; and the

sloughing tumor gives off a mal-odorous discharge not unlike that from advanced cervical cancer. It is to be borne in mind that in the menorrhagias and metrorrhagias so commonly attendant on sub-mucous myomata, the blood comes not from the tumor itself, but from the engorged and often hyperplastic endometrium: removal of the growth alone, therefore, is not to be expected to relieve the hæmorrhage; but the uterus must be curetted and its hypercongestion reduced by appropriate treatment. Hæmorrhage, of course, is chiefly to be expected from the presence of sub-mucous myomata or of the interstitial myomata in the process of becoming sub-mucous and perhaps pedunculated. Nature's method of attempting spontaneous cure lies apparently in the natural tendency of interstitial growths to make their way into the uterus, and become pedunculated; then either to slough away or be expelled by the contractions of the uterus on the foreign body. A case is recalled, seen in consultation, in which there was an intra-uterine pedunculated fibroid as large as a cobble paving stone, with profuse irregular hæmorrhages. Nothing could induce the woman to have the growth removed; but not long afterwards a terrific uterine contraction snapped the pedicle and expelled the fibroid upon the bed, whence it rolled upon the floor.

When the growth, probably always interstitial in the beginning, grows towards the peritoneal surface, following the line of least resistance, it may, of course, remain sessile or become pedunculated, and may or may not cause symptoms. Hæmorrhage is less likely in the sub-serous growths; but they may distort and displace the uterus, cause pain by pressure, or interfere with visceral function. While the sub-mucous and pedunculated growths may prevent conception or lead to abortion, the interstitial and sub-serous tumors are more likely to disturb the normal course of labor. Thus the myoma may interfere with uterine function, cause hæmorrhage, pain, and visceral disturbance, according to its size and location: on the other hand it may cause no symptoms whatever, be discovered by accident, and diminish in size after the menopause; it must be realized, however, that in a small per cent of cases the growth may degenerate, or by its

presence incite or promote, by irritation and congestion, malignant growths in adjacent tissues and organs.

The late Dr. John Homans, in his teaching, used to give the following four indications for the removal of uterine myomata: first, pain; second, hæmorrhage; third, pressure symptoms, that is, mechanical interference with abdominal or pelvic viscera; fourth, development to a size which interferes with occupation or comfort, or, in a virgin, to a size which causes suspicion of pregnancy. Many, more recent, authorities would remove all fibroids whenever discovered, even when causing no symptoms, to forestall possible future symptoms and degenerations: conservative men, however, of large experience, who have watched many cases of uterine fibroids through long periods, are disposed to let sleeping dogs lie, and operate on fibroids only when the cause of pain, hæmorrhage, or mechanical disturbance.

CASE CLXI

A well-nourished woman, aged fifty-nine, had had one normal labor and afebrile puerperium twenty-six years before, and had been a widow for two years; she had not menstruated for fourteen years. She had had good general health, and said she had never had an attack similar to the present one. Three days before she was seen by the writer, she had been seized with excruciating pain in the left lower quadrant; the pain lasted one day, and the second day thereafter the pain returned and became general over the whole abdomen. There were no chills, but she had vomited and had had slight fever.

Diagnosis. — The abdomen was distended, tympanitic throughout, and tender. The vaginal vault was puckered, and in the apex was a small, atrophic cervix. On the left was a mass reaching nearly to the umbilicus and slightly movable independently of the uterus. The following day there was slight jaundice, which disappeared the next day; pain disappeared in a few days. The diagnosis lay, to the writer's mind, between cyst of the left ovary and pedunculated subserous fibroid, with a possibility of malignant growth; and operation was advised and accepted.

Treatment and Result. — On opening the peritoneum a mass was found made up of adherent omentum, intestine, and a tumor proceeding from the left broad ligament; the tumor had the shape and appearance of an enormously distended Fallopian tube; the ovary could not be differentiated and was presumably involved in the tubal mass. The tumor had rotated once around from without inward, and the pedicle thus twisted was so small that it was tied off with a single ligature. The mass had a necrotic appearance, and it was obvious that degenerative changes must have taken place in consequence of the torsion of the pedicle. The right appendages were shrivelled and adherent, and were not disturbed. On the anterior surface of the atrophied uterus was a sessile, egg-shaped myoma, 4.5 by 3 cm., which was enucleated and the bed closed in with buried sutures. The abdomen was closed without drainage, and the patient made a rapid and uneventful convalescence.

Subsequent examination of the strangulated tumor showed that it consisted of tube and ovary; the ovary, cystic, the capsule-like wall, tense, dull, dark red in color, slightly roughened by exudation, with dimensions 10.5 by 8 cm.; the contents consisted of dark, reddish-brown fluid in which were numerous blood-cells and cholesterin crystals. The tube measured 7.5 by 1.8 cm., with walls dark red and softened, and lumen distended with dark blood.

Comment. — On comparing the pathological conditions found with the patient's statement of her symptoms, it seems incredible that such extensive changes could have occurred in so short a time. It is a fair inference that the ovary was cystic and that the tube had been the seat of a chronic process for perhaps some time without having given rise to symptoms that led the patient to seek advice. And it is quite probable that the attack of excruciating pain occurred shortly after a sudden axial rotation of the tubo-ovarian mass, from whatsoever cause, with the consequent torsion of the pedicle, resulting in hæmorrhage into the lumen of both tube and ovary, and in the inflammatory and necrotic changes noted.

CASE CLXII

A lady of refinement and attractiveness comes to the office and gives the following history: she was married at twenty-five, and two years later gave birth to her only child, a daughter, now living and well. She herself has always been well. She was left a widow when she was thirty-eight, since which time she has had to provide in part for her daughter's and her own support; this she has done in a business office. She is now forty-five years of age, and contemplates a second marriage; but before taking this step she would like to know whether there is any physical objection to her doing so. On searching inquiry she seemed to be in perfect health; she still menstruated normally, but she recalled that at the last two periods she had flowed rather more profusely than usual. There was no inter-menstrual discharge.

Diagnosis.—General physical examination revealed nothing wrong. There were minor lesions of the perineum and vagina consequent on her only labor; but the uterus was well supported in normal position and was freely movable. Inspection of the cervix immediately arrested attention: it was the seat of an old unilateral laceration, with considerable eversion and hyperplasia; the vaginal surface was glistening, indurated, nodular, — not the small, buck-shot nodules of Nabothian cysts, but of a larger, harder character. Gentle touch caused no bleeding. Even without microscopic examination, there seemed no reasonable doubt that there was a beginning adeno-carcinoma of the cervix, and such it was later proved to be on examination of the removed specimen. Yet the only subjective symptom, incidentally mentioned on inquiry, was an increased flow at the last two periods. Hysterectomy was advised to be done as soon as arrangements could be made.

Treatment and Result. — In a few days the uterus was removed by the vaginal approach, and the patient made an excellent convalescence: not long afterwards she married. As the married name and address were unknown to the writer he could not communicate with his patient and satisfy a surgeon's desire for a knowledge of ultimate results. Fifteen

years later, however, he was called in consultation to see a case of abdominal tumor, and then learned that the patient was the same as the one whose earlier history is given above. She had enjoyed excellent health until about a year before, when she was conscious of a growing abdominal enlargement, with digestive disturbance and intestinal discomfort, but no severe pain. There was free fluid in the peritoneal cavity, a general nodular feel on abdominal palpation, and a slight cachexia: the able family physician had made a presumptive diagnosis of general abdominal carcinosis, in which opinion the consultant agreed. Autopsy confirmed this opinion two weeks later.

Comment. — It seems unreasonable to believe that the abdominal cancer in this case had any connection with the cervical malignant growth so promptly removed. At least fourteen years had elapsed after hysterectomy, during which time the lady had had excellent health, before there was a consciousness of any abdominal symptoms; and although abdominal cancer is insidious, partly from the fact that pain is a late symptom usually, it is incredible that it could have developed by metastasis from the early cervical growth. The case illustrates, however, the wisdom of the patient in seeking advice before a late re-marriage; and also the value of early diagnosis and prompt, radical treatment.

CASE CLXIII

A hard-working multipara, wife to a Back Bay horse-car driver, enters hospital for the relief of uterine hæmorrhage: she had married young, had borne a family of children, and had always been well until she was about forty-eight, when she began to have the usual symptoms of the menopause and various functional disturbances so often observed in tired-out women. For a year or two the menstrual periods were irregular, never coming oftener than the usual four weeks and generally with an interval of six or more weeks: the blood loss was never excessive. When she was fifty, however, she began to flow more frequently, with increased amount and some clotting. She then consulted a physician, who made no pelvic examination, but gave her a tonic for her poor appetite and loss of strength. In a few months she noticed that she was having, between her irregular times of flowing, a watery discharge sometimes streaked with blood; this irritated her genitals and caused itching: about this time, too, she noticed that she bled a little after " going with her husband ". After a time the discharge began to be offensive, and she again consulted her physician; he made no examination, but prescribed vaginal douches: the bloody discharges were often worse, however, after she took the douches. She had very little pain, but felt she was growing weaker and losing weight: finally she had several severe hæmorrhages, which so exhausted her that she kept her bed, and as she could not be cared for at home her husband brought her to hospital.

Diagnosis. — Of course a sloughing uterine pedunculated fibro-myoma might cause a train of signs and symptoms like those above mentioned; but all things considered, there was no reasonable doubt that the diagnosis would prove to be cervical carcinoma. After cleansing the vagina of the foul, bloody discharge it was found that the infra-vaginal cervix had practically disappeared; there was only an irregular fringe of nodular tabs at the cervico-vaginal junction, and within this circle was a crater lined with bleeding papillomatous tissue. There was no invasion of the vaginal wall; but the broad ligaments were infiltrated and the uterus fixed. The

microscope was not necessary to show clearly the presence of cervical cancer, advanced far beyond hope of radical operation.

Treatment. — After a few days of preparation as to rest, bowels, and kidneys, the remains of the infra-vaginal cervix were cut away, and the crater curetted down to firm tissue; bleeding was considerable until the friable parts were removed: the affected area was then thoroughly seared with the Paquelin cautery, and the vagina dressed with gauze. After the cautery slough had separated, the base was painted every third day with a five per cent solution of pyoktannin, which caused a marked shrinkage in the crater. In three weeks the patient was discharged much improved in general health and free from her mal-odorous vaginal discharge; indeed, there was no appreciable discharge whatever.

Result. — This patient was not seen professionally again; but inquiry was made from time to time of her husband on his horse-car. It appeared that she had no more hæmorrhages or offensive discharges, but gradually failed and died in about eight months.

Comment. — Allusion has already been made to the duty of the physician to investigate every case of irregular or unusual bleeding during the climacteric: were this duty conscientiously done, many cases of uterine cancer would be discovered in time to make radical operation distinctly hopeful. When cases are seen too late for even hope of cure, much can be done to alleviate symptoms and palliate distress: the method outlined above is the one usually followed, and is probably as good as any; but recurring symptoms often call for repeated treatment. After removal with the curette of bleeding proliferations, a great variety of measures have been employed to harden and contract the parts. Equal parts of strong tincture of iodine and concentrated carbolic acid cause a moderate slough and make the next best application after the actual cautery. Good results have followed the use of pyoktannin, and much is claimed for acetone, and for carbide of calcium which liberates acetylene gas in the tissues. There is no question that with perhaps repeated curettings and cauterizations, and the occasional use of approved topical applications, life may be prolonged to these unfortunates and euthanasia finally promoted.

CASE CLXIV

The nulliparous widow of a professional man, forty-seven years of age, still menstruating regularly, but with rather scanty flow, and some leucorrhœa, for a year has had a dull pain in the lower abdomen, aggravated by defæcation. Recently she had sharp pains in the back extending to the left iliac region and groin. There were no other symptoms and the general health was excellent.

Diagnosis. — Physical examination disclosed nothing abnormal except the uterus, which was irregularly enlarged to the size of the fist. The probable diagnosis was multiple fibroid uterus, and the case was taken under observation. Six weeks later she began to notice some enlargement of the abdomen. The following month she was comfortable except for intestinal indigestion and flatulency. The tumor was a little larger, and slightly tender; there had been no catamenia since her first visit. Four months after she was first seen she had a sharp attack of abdominal pain requiring morphia: the tumor had enlarged nearly to the umbilicus and was more irregular in shape. Operation was decided on.

Operation and Result. — When the peritoneum was opened there was an escape of bloody serum; on the left was the fibro-cystic mass, making the bulk of the tumor previously felt; on the right, a malignant growth with numerous smaller cysts: there were general intestinal adhesions. In the face of this abdominal carcinosis, operation seemed futile, but offered the only hope. The entire mass was removed, and several papillary growths on the parietal peritoneum: the abdomen was closed with drainage. The patient gradually failed and died a week later. The pathologist's report was simply carcinoma.

Comment. — Carcinoma was not suspected in this case, either from symptoms or from physical examination. The diagnosis of multiple sub-serous fibrosis seemed clear enough, and such indeed was found: the relatively small amount of pain was no more than would be expected from a fibroid tumor with localized peritonitis and adhesion formation. There had been no failure in general health, no loss of weight, and there was no cachexia. The gynæcologist must expect to meet these surprises occasionally.

CASE CLXV

An unmarried lady of fifty-five, seeking advice on account of uterine hæmorrhage, is referred by a surgeon who formerly attended her. Her history is as follows: the menstrual function was established at sixteen, and the flow had always been regular, painless, and not excessive in amount. She had had no important illnesses, and her general health had always been good, up to her forty-third year, when she began to have abdominal pain, and three months later noticed some abdominal enlargement. Several months later she consulted one of Boston's best surgeons, who found a tumor filling the pelvis and rising above the umbilicus: this tumor proved to be a large, adherent dermoid cyst of the right ovary. The tumor was successfully removed, and the convalescence was normal. At operation the uterus was seen to be small and to contain several small fibroids, which it was thought best not to remove. (This was twenty-one years ago, and myomectomy was not a common procedure at that time. Now small fibroid nodules of the uterus are generally removed when the abdomen is opened for any purpose, much as is the normal appendix, to guard against future possibilities.)

The lady remained in excellent health for ten years, and when she was fifty-three the catamenia became irregular: the following year, however, the flow was occasionally excessive, and during the year preceding her reference to the writer she had flowed more or less constantly: for this condition advice was sought, at the age of fifty-five.

Diagnosis. — The general examination revealed nothing abnormal; but there was general pallor of the body, and there had been some loss of weight. The introitus and vagina had undergone the usual anile atrophic changes, and would admit only one finger. The cervix was small and directed forward: the os was not patulous. The uterus was retroverted, enlarged to the size of a cocoanut, and irregular in shape, warranting a presumptive diagnosis of multiple fibrosis. The broad ligaments were not infiltrated. Under ether the uterus was found to be four inches in depth, and a diagnostic curettage was performed: a considerable amount of friable tissue

was removed, and the pathological diagnosis awaited. The report was " malignant adenoma ". The patient was then advised that hysterectomy should be performed; but in view of the fact that uterine adeno-carcinoma metastasizes slowly, and as the patient was not then in favorable condition for capital operation, owing to the loss of blood, it was thought wise to send her into the country to recuperate.

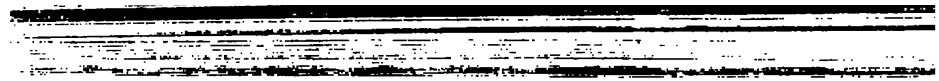
Operation and Result. — The lady returned for operation in three months and a half: she had had one profuse hæmorrhage; but she had gained strength, color, and weight, and was in much improved general condition. Under general ether anæsthesia panhysterectomy was performed by abdominal incision: the uterus was the seat of multiple fibroids. The vaginal vault was closed in from above, and the abdomen closed with mass sutures without drainage. The patient made a smooth convalescence and was discharged, well, in a month. The vagina was two and a half inches deep, the vault closed. The pelvis was empty.

Pathological Report. — " Multiple fibroids and malignant adenoma."

Ultimate Result. — The surgeon who kindly referred the case to the writer wrote, under date of July 25, 1914, that the patient " is well, goes shopping, and leads the sort of life she always has done when in good health. I think you are justified in calling that a cure ". Eight years and five months had elapsed since operation.

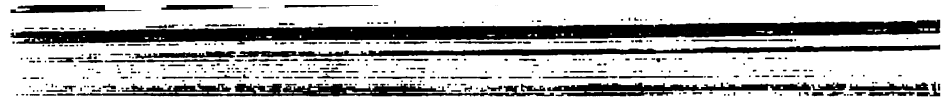
Comment. — This is one more case which illustrates the fact that it is generally the nulliparous woman who has fibroids. Of course this neoplasm does occur in parous women; but as a rule the growth develops, if at all, long after the uterus has served its physiological purpose.

The writer believes that one factor of success in this case was the postponement of hysterectomy until the patient had recovered from the great loss of blood suffered before the diagnostic curettage. Postponement in this case was possible for the reasons previously stated; but of course in adeno-carcinoma of the cervix, a delay of three or four months would probably have resulted in metastases which would have generally clouded the prognosis.



SECTION V

ANILITY



OLD AGE

Who shall say at what age woman may be said to be old? Many women look old at forty; others preserve their matronly comeliness, an erect figure, and an alert mind, with no failure of special sense, unless of eyesight, until after the scriptural allotment of three score years and ten. Menstrual life and the reproductive function cease, to be sure, with the climacteric; but it is a mistake to suppose that thereupon healthy and happily married women lose all interest in the sexual relation and become sexually anile. This fact the writer learned in his early professional life in a way that caused him mortification and discomfiture. He performed an extensive plastic operation for uterine procidentia on a woman of seventy, whose husband was somewhat older; the vagina was greatly narrowed and barely admitted one finger: the result to the surgeon was very gratifying; but some days after the usual convalescence the husband appeared with the complaint that coitus was no longer possible, and the writer had the chagrin of being required to incise the posterior wall he had so effectually narrowed. This experience is thus given for two reasons: first for the guidance of young surgeons who may be as ignorant as the writer was, in supposing that sexual life necessarily ceases soon after the climacteric; and second that women at the menopause, overcome with depression by the thought of presumed loss of womanhood and womanly attractiveness, may safely be told that some years may elapse before the connubial relationship passes into final abeyance.

It is only in a gynæcological sense, then, that anility is said to follow upon the climacteric. To be sure, with the cessation of procreative function, atrophic changes gradually take place in ovary and Fallopian tube; the uterus shrinks to rudimentary size, the ora may close, and the vaginal portion may disappear; the vagina shortens, narrows, and loses its pavement epithelium. On the other hand these atrophic

changes and altered blood supply often modify, or put an end to, previous morbid processes, and woman emerges from a semi-invalidism to years of health and serenity: many women will testify that the years of gradual decline incident to all humanity are years of happiness and human usefulness.

1. Functional Disturbances

With the cessation of physiological function the possibility of functional disturbances naturally disappears. Various neuroses and untoward psychical phenomena not infrequently follow a pathological menopause, and sometimes menstruation is protracted even to the age of fifty-seven without apparent explanation; but other disturbances supposed by the laity to be functional will be found to have a morbid basis.

2. Malformations and Displacements

Remediable malformations are not to be expected in old age, and with a single exception the same may be said of displacements: the essential organs have undergone atrophic changes, and versions and flexions of the uterus no longer cause symptoms. But not infrequently, owing to progressive muscular enfeeblement and the absorption of supporting fat, a moderate procidentia of late maturity gradually becomes a genital hernia, with the usual sequelae of abrasion, ulceration, and great physical discomfort: prolapse of the rectum and of the urethral mucosa also sometimes are observed. Genital hernia in the aged may be treated surgically, if general health and safe general anæsthesia permit; otherwise resort must be had to topical treatment and the use of pessaries.

3. Infections

Venereal infections are not to be expected in this epoch; but owing to impaired tissue resistance and atrophic epithelial changes in the genital tract, anile vulvo-vaginitis and endometritis are not infrequent. These affections give rise to irritating discharges and are a fertile cause of chronic pruritus. Physiological closure of the cervical canal preventing the exit of uterine secretions gives rise to hydro-

metra or pyometra. Anile vaginitis is otherwise known as adhesive vaginitis, which is observed also in childhood. The retrogressive loss of pavement epithelium and fibrous changes in the mucosa easily result in inflammation under irritating uterine discharges; suppuration and granulation naturally ensue, and cicatrization and more or less extensive adhesions follow. Inflammation in the glands and crypts of the vestibule may give rise to tormenting pruritus. Low grade infections of the urinary bladder, aside from diabetic urine and the residual urine in cystocele, to say nothing of the concentrated urine of women who habitually drink too little water, not only give rise to distressing vesical symptoms, but are a fertile cause of vulvo-vaginal irritation. Sometimes there is no apparent physical cause of vulval pruritus, and it is attributed to neuropathic conditions. But whatever the cause, the itching and burning of chronic pruritus give rise to intense suffering, loss of sleep, deterioration of health, and a train of nervous symptoms even ending in melancholia or other forms of insanity. Intelligent treatment presupposes a successful search for the cause; and unless due to diabetes, most cases are curable or greatly relievable, provided the patient is under full professional control, and gives her faithful and obedient co-operation.

4. Traumata

Aged women are sometimes the victims of criminal sexual assault, and of course are remotely liable to accidental vulvo-vaginal injury: otherwise there should be no traumata in this period.

5. Neoplasms

New growths are not common in this epoch, although they are observed occasionally. Carcinoma of the uterus is surely infrequent, and when it occurs is of slow growth and metastasis. Epithelioma of the vulva is not uncommon and from slower growth than in earlier life is more susceptible of radical cure. Whether or not from genital irritation incident to pruritus, carcinoma of the clitoris is sometimes seen, and a prolapsed urethra may take on malignant degenerative

changes. Cysts of the ovary sometimes develop late in life. Although without statistical authority, it would seem to the writer that in the aged of both sexes carcinoma is more likely to originate in the gastro-intestinal tract, or in other non-pelvic organs.

GENITAL HERNIA

CASE CLXVI

A widow, seventy-two years of age, bore her third child when she was forty-eight, and passed the climacteric at fifty. For twenty years she had been troubled with her " womb coming down ", but had become much worse in the past three years: she had never sought medical advice, her family ignoring her complaints until her presence became obnoxious to them on account of the offensive odors of her person; then she was sent to the hospital.

Diagnosis. — When she was brought to the consulting room for examination it was thought from the usually unmistakable odor that her case was one of uterine carcinoma; but inspection revealed a genital hernia as large as a cocoanut, consisting of the entire vagina, uterus, and part of the bladder. There were several erosions and ulcerations, emitting a foul, purulent discharge. The vaginal wall was thickened. The uterus measured only a little over three inches in depth, and was not therefore sufficiently heavy to have dragged down the vagina, but was dragged down by the gradually prolapsing vaginal walls. The patient for some time had been unable to empty her bladder, but passed urine frequently and in small quantities. Examination showed the urine to be alkaline, and to contain hyaline and fine granular casts.

Treatment and Result. — The hernia was easily reduced; but a well-marked cystocele still protruded. Treatment consisted of rest in bed, glycerite of tannin tampons, and such general measures as the enfeebled condition of the patient demanded. In two weeks the ulcerations were healing rapidly, and in three weeks the woman was allowed to sit up most of the time. The mental condition, however, was unsatisfactory, and several attacks of unconsciousness and great general prostration, due in part to chronic diarrhœa, presaged an early lethal issue; there was therefore no indication for further local treatment other than the continued use of the astringent tampon, which held the reduced hernia and made the patient comfortable.

Comment. — In the case of this enfeebled nephritic, surgery was of course out of the question: even soft rubber

pessaries were inadvisable in the recently healed vagina. Notwithstanding the necessity of frequent renewal, which, however, can readily be done by a nurse, medicated wool tampons meet a useful and rational indication in such cases.

CASE CLXVII

A multiparous lady of seventy-six, the widow of a professional man, had suffered with a gradually increasing procidentia probably for many years, but had borne her affliction in silence, and it was only in the latter part of her life that the protrusion was discovered by her nurse. Owing to the discomfort of being on her feet, or even of sitting, she had given up going out of doors and spent most of her time lying down: she was also in feeble general health.

Diagnosis. — There was a complete genital hernia and also a considerable prolapse of the urethra. The uterus had undergone anile atrophy, and in the recumbent position slipped back within the introitus; but the vagina remained protruded.

Treatment and Result. — As there was no abrasion or ulceration of the vaginal walls or cervix, no preliminary treatment was necessary. The parts were replaced, and a round, soft rubber, inflated pessary, sometimes called a doughnut pessary, was fitted; by this means the parts were retained, and the patient was enabled to go up and down stairs and to go out driving. The prolapsed urethra retracted under the use of astringents, and gave no further trouble. The nurse was instructed to withdraw the pessary when the patient went to bed at night and cleanse it in a boric acid solution: she was to replace it before the lady rose in the morning. In this way the patient passed her few remaining years in comfort, and was able to go about as her strength permitted.

Comment. — The inflated pessary of course acts simply as an obturator, and does not raise the uterus to its normal place; but it will keep the parts within the introitus, and serve as a palliative measure when the various surgical procedures are contra-indicated. Of course it must be well fitted, and must be kept clean; but an intelligent woman can take care of her own pessary, if not too feeble. One objection to this kind of pessary is that it gradually becomes deflated after a time, and thus ineffective; but it is an easy matter to re-inflate with an air bulb and hypodermic needle, the latter being passed through a thickened part of the wall, placed for this purpose: after a time a new pessary must be substituted.

CASE CLXVIII

A widow, sixty-five years of age, a sober, industrious housewife, had borne six children, the youngest being thirty-two. Her health had always been good until a year before, when she became somewhat debilitated and began to suffer with "falling of the womb". At the time of consultation she was in perfect general health, and wished only to be relieved of the local trouble, which alone prevented her from performing her usual household duties.

Diagnosis. — There was a complete prolapse of the anterior vaginal wall, which was thickened and whitened from attrition and exposure: the cervix protruded from the vulvar cleft, and the perineum was torn and stretched; but there was no marked protrusion of the posterior vaginal wall. The uterus was not enlarged.

Treatment and Result. — The general health of this well-balanced and still active woman in no way precluded anæsthesia and surgery, and operative treatment was readily accepted. The first step was to keep the woman in bed for a week to rest her body and to promote the depletion of the pelvis with the help of glycerite of tannin tampons. It was at first intended to do an anterior colporrhaphy before closing the perineum; but as the uterus was not heavy, it was finally decided to make a more extensive denudation of the posterior wall and practically close the vagina, in the belief that in this way efficient support would be given to the anterior wall and subsequent prolapse prevented. The denudation was therefore carried well up on the sides of the vagina and nearly to the posterior fornix: the area was closed with catgut in the vagina and silver wire externally; thus narrowed, the vagina would not pass the index finger. The patient was comfortable after operation, and had scarcely any pain or constitutional disturbance: the temperature was normal on the third day. The external stitches of wire were removed on the ninth day, and two weeks later the woman was allowed to sit up and begin to walk about. Perfect union had taken place and the vagina would admit nothing larger than a lead pencil. The general condition was excel-

lent, and the patient returned to her family in just a month from the time of beginning treatment.

Ultimate Result. — Five months later the woman returned for inspection: she was in perfect health, the vagina would admit only the index finger, there was no protrusion, the uterus was high in the pelvis undergoing anile atrophy. Six months after this visit she again returned on request. During this time she had performed her usual duties and had remained in good health: there had been no change in the local condition, the uterus still remaining high and the vagina narrow. It seemed, therefore, that her relief would be permanent.

Comment. — Unlike the subjects of the last two preceding cases, this patient was well able to undergo surgical treatment, and had apparently the expectation of some years of useful activity; it therefore seemed good judgment to attempt a radical cure, rather than to temporize with pessary. The end seems to have justified the means.

CASE CLXIX

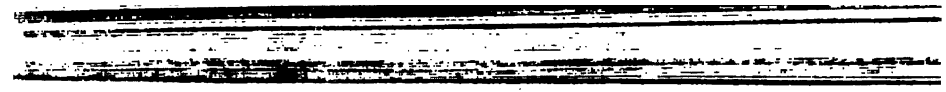
A widowed Irish housewife had married at fifteen and passed the menopause at forty-three. She had had thirteen children; but only three were living. She said she was forty-five years old, and had entered the hospital for relief from "falling of the womb"; she complained of nothing else.

Diagnosis. — The woman has grey hair, her face is wrinkled, all her teeth are gone. A loud systolic murmur is heard all over the precordium: the radial pulses are regular, equal, and of good volume, the arteries rigid, the blood-pressure 160. The urine shows a chronic nephritis. Apart from other evidences of sclerosis the general physical examination is negative. The woman claims to be only forty-five years old; but if man is as old as his arteries, she would surely find her place in the anile period. Local examination disclosed a complete genital hernia, the protruding mass including the entire uterus and vaginal wall, with marked cystocele and rectocele. The uterus was heavy and engorged, the cervix deeply lacerated: on the posterior aspect of the hernial mass was a circinate ulcerating area; on the anterior the mucosa was thickened and leathery.

Treatment. — The patient was kept in bed, and the replaced hernia thus remained within the introitus: the ulceration was treated with frequent applications of five per cent nitrate of silver solution: hot water douches were given to deplete the parts. Catharsis, abundant fluids, and non-proteid diet reduced the blood pressure to 145 and greatly improved the urine excretion. After a fortnight of this treatment the ulcerated area was healed, and the general condition so far improved that surgical treatment seemed judicious.

Operation. — Vaginal hysterectomy and partial resection of the vagina seemed the most suitable procedure in this case, and they were performed after the method of Cullen. The reduced hernial mass was drawn down, and a circular incision made around the protrusion through the vaginal wall midway between the meatus and os uteri: through this opening the bladder was pushed up and the uterus removed.

GENITAL HERNIA



The peritoneal opening was closed with catgut transversely, and the vaginal wall in the same way: the cystocele was thus obliterated. The shortened vagina was then restored within the introitus, and narrowed by a Hegar colpo-perineorrhaphy to the size of the index finger.

Result. — The patient made a good convalescence, and was discharged three weeks after operation: the introitus would just admit the forefinger to its full length.

Comment. — This patient could not be traced, and the ultimate result is unknown; but there is no reason to believe that the shortened and narrowed vaginal cul-de-sac would again protrude, relieved as it was of the weight of the uterus. This method of dealing with the genital hernias of elderly women with heavy uteri, and still able to bear anæsthesia and the slight shock of vaginal hysterectomy, has much to commend it.

CASE CLXX

A lady seventy years of age, married but nulliparous, seeks advice on account of annoying pruritus and irritation at the vulva, which for some weeks have troubled her. She complains also of frequent micturition and nervousness; otherwise her health is fairly good. She knows of no organic disease.

Diagnosis. — The vulva was flabby from fat absorption, and there was evidence of rubbing and scratching, — a few serum-weeping surfaces and linear fissures: the meatus was somewhat reddened. There was a slight, sticky, blood-flecked, vaginal discharge. Inspection of the vagina showed a few erosions, which bled slightly on wiping with cotton, and numerous red points diffused over the walls: there was as yet no adhesion of opposing surfaces. The uterus was atrophic, and gave no visible discharge. The urine was concentrated and strongly acid, but contained no sugar: the lady admitted that she drank very little water. The case was obviously one of anile vaginitis, the discharge from which, together with the hyperacid urine, irritated the vulva and caused pruritus: scratching caused the lesions.

Treatment and Result. — The lady was given ten grain doses of sodium bromide three times a day. She was directed to drink eight glasses of water, in three of which, morning, noon and night, she was to take fifteen grains of acetate of potash. She was to take a weak lysol douche three times a day. As often as there was any itching she was to apply a lotion of carbolic acid and lime water, one dram to the pint, followed with two per cent borated lanolin on the abrasions of the labia. Finally, every third day she was to come for the application of the vaginal wool tampon moistened with glycerite of tannin. Under this regimen in two weeks there was marked improvement: the acetate of potassium and the tampons were omitted, and two weeks later all symptoms had disappeared.

Comment. — A not infrequent cause of vulvo-vaginal irritation is the discharge due to endometritis in aged women, caused by upward extension of infection by pus germs to

which the anile condition of the uterine mucosa offers little resistance. In the treatment of anile endometritis, if attention to the general health, and hot antiseptic vaginal douches do not suffice, intra-uterine medication with iodine, argyrol or protargol may be necessary, or even curettage.

CASE CLXXI

A lady of eighty-five, a nulliparous widow, in her modesty unwilling to consult her physician, had for months suffered with frequent and painful micturition, and an annoying soreness about the genitalia: it seemed to her there was abnormal protrusion. Finally the protrusion began to enlarge, then to give off an unpleasant discharge, and then she asked her physician's advice. Aside from this trouble and cardiac arrythmia she complained of nothing.

Diagnosis. — Seen in consultation, attention was given only to the annoying local condition. On first inspection of the vulva the appearance was that of a protruding, excoriated, atrophic cervix; but examination showed the protrusion to be the prolapsed urethra, the resulting tumor being an inch long, four-fifths of an inch in diameter. In the center was the urethral canal; the color was dusky red; the surface was soft and papillomatous: there was superficial necrosis at the distal end, and a moderate, grumous discharge. Without waiting for a microscopic examination of a removed segment, it seemed obviously a case of cancer of the prolapsed urethra: removal was advised.

Treatment and Result. — Five days later, under general ether anæsthesia, the mass was excised, care being taken to prevent the retraction of the proximal urethral mucosa; the mucous surfaces were then brought together in a circle with five sutures of number one catgut. During the first two weeks of convalescence the patient suffered quite a little in various ways. At times there was a very frequent escape of urine, and at times she had retention or thought she had: but after two weeks she was able to control the bladder, and passed urine with little, if any, pain. She was able to sit up nearly all day, after two and a half weeks, and complained only of not feeling strong: the healing was complete. Five weeks after operation the family physician reported that the lady was in her usual health, and was feeling quite well.

Pathological Report. — "The specimen consists of a spool-shaped, cylindrical mass of soft, friable, spongy, papillomatous, fungating tissue, 2.5 cm. by 2 cm. by 2 cm. in

dimensions. This mass is penetrated axially by a canal, the urethra, and appears to consist largely of an ectropion of the lips of the external urinary meatus."

"On microscopic examination of sections, the distal part of the tumor is found to consist of an underlying stroma of dense connective tissue, on top of which are heaped up masses of epithelial cells, many of which are arranged in whorls and typical cancer nests. The proximal portion of the tumor shows a zone, about one-eighth of an inch in thickness, of normal tissue intervening between the line of excision and the border of the growth. The mucous membrane of the urethra appears everywhere normal, except at the meatus, where its epithelium passes into and merges with that of the tumor."

"Diagnosis: epithelioma of the urethra, originating at the meatus."

Ultimate Result. — At the present writing over three years have elapsed since the operation: the family physician reports that the lady is alive and well, and that there is no sign of recurrence of the growth.

Comment. — Marked prolapse of the female urethral mucosa is of rare occurrence, especially when, as in this case, the subject is nulliparous. Moderate degrees of prolapse are fairly common in those who have borne several children: such cases are easily differentiated from polypus and caruncle. In the case above given the marked prolapse may reasonably be attributed to anile tissue relaxation; and once prolapsed, the epitheliomatous degeneration might naturally ensue from the irritation of unwonted contact and attrition.

CASE CLXXII

A lady of sixty-three had married in her youth, but had never been pregnant. There had been nothing peculiar in regard to her menstruation, except that she was unable to say when it had ceased: for some years she had flowed at irregular intervals, sometimes with pain and the passage of clots; otherwise her health had been excellent. For the last preceding nine months, however, she had had a profuse, foul, vaginal discharge, with cramp-like pains throughout the lower abdomen, and frequent, painful micturition: these were her only complaints.

Diagnosis. — The lady looked healthy, but was very fat, weighing three hundred pounds. Nothing but the presence of fat could be made out by abdominal palpation, and bimanual examination gave no certain results: vaginal examination showed the cervix to be dilated by a presenting mass, the size of a small hen's egg, which to gross appearances was a fibro-myoma with superficial necrosis and giving off an offensive discharge. Under general anæsthesia the uterus was found to be movable, in normal axis, and three inches in depth. The canal was dilated: the presenting growth was found pedunculated, attached to the anterior cervical wall; it was removed with scissors. Exploration of the uterine cavity with a curette removed a friable mass, 1 by ½ by ¼ inches, which had the gross appearance of sarcoma: the uterus was wiped out with iodine and the pathological report awaited. The report on the friable mass removed with the curette was adeno-carcinoma. In view of the diagnosis thus established beyond question it was advised and urged that the uterus be removed. Although the prognosis without operation was clearly stated, hysterectomy was declined, and after a normal convalescence from curettage the lady returned to her home in improved general condition, and for the time free from uterine discharge.

Eight months later she returned to Boston and begged for operation. It was pointed out that the prognosis was much less good than when the diagnosis was made; but the patient

said she preferred to die rather than to live longer with the pain and discharges she then suffered with.

Operation and Result. — Pan-hysterectomy was performed by the combined route: a cyst of the right ovary, two inches in diameter, and bilateral chronic salpingitis were found on opening the abdomen; both appendages were removed. Operation was extremely difficult on account of the thick wall of fat; but the patient left the table in good condition, and the dangers of shock and secondary hæmorrhage were safely passed. Bronchitis developed on the second day, however, and peritonitis on the third; and death ensued three days after operation.

Comment. — The only comment the writer has to make on this case is that it illustrates the well-known fact that fat persons are poor surgical risks.

CASE CLXXIII

The cultivated wife of a professional man had been under the writer's occasional observation and medical care for twenty-five years. She was a teacher in her youth, had married at the age of twenty-three, and had borne seven children: when first seen she was in the midst of the climacteric, and during the next seventeen years she sought advice from time to time for various functional ailments; but there was never any organic trouble with the pelvic organs. Six months after she was seventy she came with a statement that three months previously she had first noticed an enlargement of the abdomen and that since that time there had been a rapid increase. For a woman over seventy she considered herself pretty well: she was naturally concerned by the rapid growth of an abdominal tumor; but aside from a sense of distention she was singularly free from symptoms.

Diagnosis. — The abdomen was larger than in full-term pregnancy: the uterus could not be palpated: the bladder was not distended. The tumor seemed to fill the entire abdomen; but there was tympany in the flanks and in the epigastrium. There was a well-marked fluid wave. There was no irregularity, or nodular feel. The rapid enlargement in a woman over seventy suggested a malignant growth; but the physical findings did not point to it. A diagnosis was made of ovarian cyst, with a suspicion of partial axial rotation.

Operation and Result. — The usual median incision revealed a large unilocular cyst of the ovary, free from adhesions, and without any torsion of the small pedicle: the uterus and other ovary were atrophic, and there was no evidence of malignant disease. After an uneventful convalescence the lady returned in her usual condition of health to her home in another State.

Nothing further was heard from this patient until seven and a half years later, when she was seventy-eight years old; she then wrote that for several years she had had more or less irritation about the vulva and at times a good deal of itching. She was now led to ask advice on account of a

warty growth on the labia, which had begun to give off a bloody, purulent discharge, and caused much discomfort in sitting or walking: the lady was advised to come to Boston for examination.

Diagnosis. — Examination revealed a papillomatous mass involving the entire right labium majus and minus, clitoris, prepuce, and part of the left labium minus: the outer border was elevated and indurated, and there were several areas of ulceration: the inguinal glands were somewhat enlarged. The patient's general condition was that of a rather enfeebled woman of seventy-eight, who for some months had been confined to her room. The diagnosis seemed to lie between cancer and tuberculosis: there was no evidence of tubercular infection elsewhere, and there was a ready explanation of the development of epithelioma in an aged person from the continued irritation of the parts by rubbing or scratching; so there was a preponderating probability that the growth was carcinoma. In either event, excision of the growth was advised.

Operation. — Under general anæsthesia the affected parts were circumscribed with a knife, the incision being carried, it was thought, sufficiently far beyond the indurated border, and the mass removed with knife and scissors; a few large bleeding points were tied. Owing to the looseness of the skin from the absorption of fat, it was possible to close in the wound without undue tension on the silkworm-gut sutures. At first it was thought advisable to remove the inguinal glands; but it was decided not to do so for two reasons: first, because it seemed unwise to give this additional shock to the aged woman; and second, because as epithelial cancer metastasizes slowly in the aged it was thought quite probable that the glandular enlargement was due to bacillary infection of the growth rather than to malignant metastasis.

Result. — The stitches were removed on the tenth day, and there was a good union except in a few small areas which soon granulated in. Eleven days later the patient could sit and walk without discomfort, the general health was much improved, and she returned to her home.

Pathological Report. — Specimen consists of a mass of soft tissue representing the entire right labium majus and minus, the clitoris and prepuce, and part of the left labium minus. The central portion of this mass is occupied by a papillomatous, fungating tumor divided into two main lobes, the whole having dimensions of 7 cm. by 4½ cm. by 2½ cm. Microscopic examination shows the tumor to consist of columns, masses, and whorls of cancer cells of the squamous type. Careful study of a series of sections about the periphery of the tumor shows extensive round-cell infiltration of the surrounding tissues, but reveals no point at which cancer tissue reaches the line of excision. At the point corresponding to the right upper portion of the vestibule the margin of clear tissue between the cancer and the line of incision was only ½ cm. in diameter; but the mucous membrane over this border seemed normal, and although the underlying tissues were infiltrated with round cells, there was no evidence of invasion by carcinoma. Pathological diagnosis, squamous epithelioma of the vulva.

Ultimate Result. — Six months after the patient's returning home a letter from her son said: "She is entirely well; there is no sign of recurrence". A year later the report was: "There is nothing the matter with her". At this time she was taking long rides by automobile and enjoying her usual interests in life. A year later, when nearly eighty-one, she succumbed to a cerebral hæmorrhage: at the time there was no return of malignant growth.

Comment. — There is perhaps no occasion for comment on this case, unless it be to call attention to its unusual character: to survive the removal of a large ovarian cyst at seventy, and of a large portion of the vulva at seventy-eight is not a common experience.

INDEX

A

PAGES

ABDOMINAL CARCINOSIS 428, 431
ABNORMAL PRESENTATION of fœtus 86, 214, 215, 250, 263, 380
ABORTION, for cardiac disease 140
in chronic nephritis 165
Incomplete 177
Neglected 178
Septic 272
Therapeutic 141, 144
Tubal 183
ABSCESS, Alveolar 320
of Bartholin's gland 48
of Skene's gland 46
Ovarian 352
Pelvic 56, 355, 356
Peri-urethral 348
Tubo-ovarian 356
Vulvo-vaginal 21
ABSENCE of breasts 23
of internal genitalia 111
of nipples 23
of uterus and appendages 21
of vagina 21, 42, 111
ACCOUCHEMENT FORCÉ, dangers and disadvantages of 146
in chronic nephritis 165
ACUTE INVERSION of the uterus 340
ADENO-CARCINOMA of uterus 340, 397
ADENOCYSTOMATA 110
ADENOMA, malignant, of uterus 432
ADHESIONS, Pelvic 336
Preputial 7
ADOLESCENCE 19
Amenorrhœa in 19, 23
Dysmenorrhœa in 20, 24, 25, 28, 29, 31, 35
Infections in 21, 45, 46
Malformations and displacements in 21
Neoplasms in 21
Traumata in 21
AMENORRHŒA 19, 23, 111, 113
in puberty and adolescence 19
ANÆSTHESIA in surgical treatment of toxæmias of pregnancy with convulsions 150

Pages
Anæsthol in surgical treatment of toxæmias of pregnancy with convulsions. 150
Anal Sphincter, rupture of 366
Angioma Urethræ 22, 61
Ankle 437
Functional disturbances in 438
Infections in 438
Malformations and displacements in 438
Neoplasms in 439
Traumata in 439
Annular Hymen 118
Anomalies of bony pelvis causing dystocia 84
of expellent powers 78
of fœtal passenger 85, 86, 180, 214, 215, 250, 263, 380
of maternal passage 81
of soft parts 81, 82
Anteflexion of cervix uteri 94
as a cause of sterility 125
congenital 35
of corpus uteri 28, 94
Ante-partum Hæmorrhage 222, 335
complicating pregnancy 77
Study of Pregnant Women 85, 87, 163
Anterior Colporrhaphy 413
Anteversion of uterus 94
Anus, Imperforate 3, 43
Rupture of 366
Appendectomy during pregnancy 175
Appendicitis complicating pregnancy 175
Asphyxia, Impending fœtal, signs of 213
Atresia, Cervical 82, 122, 229
Gradual dilatation of 123
Hymeneal 38
Vaginal 81, 93
Congenital annular 331
Vulval 81
Axial Rotation of ovarian cysts 66, 109, 399, 400, 402, 425

B

Bartholin's Gland, Abscess of 45, 48
Cyst of 45, 46
Betrothal, Physical examination before 112
Bladder, Distention of 173
by retroverted, pregnant uterus 172
Extrophy of 3
Foreign bodies in 4
Blood Transfusion in acute anæmia of placenta prævia 200
in ruptured tubal pregnancy 186
Bony Pelvis, Anomalies of 84
Border-line Cases, Test of labor in 242
Breasts, Absence of 23

PAGES

BREECH, Manual extraction of ... 250
BROAD LIGAMENT, Cyst of ... 110
Hæmorrhage from laceration of ... 102
BROKEN COMPENSATION in cardiac disease ... 141
BUBO ... 49

C

CÆSAREAN SECTION, Abdominal incision in ... 247
Dilatation of cervix prior to ... 245
Eventration of uterus in ... 244
for cicatricial cervicial atresia ... 229
for dystocia from fibro-myomata ... 232
for generally contracted, flat, rachitic pelvis ... 246, 320
for justo-minor pelvis ... 241, 243, 247
for treatment of toxæmias of pregnancy with convulsions ... 147
in labor complicated by cancer of cervix ... 237
in placenta prævia ... 205
CANCER of cervix uteri ... 237
Amputation as a prophylaxis against ... 419
Epidermoid, of vulva ... 454
CARCINOMA of cervix ... 84, 427
Early diagnosis of ... 427
Inoperable ... 429
of corpus uteri ... 108, 397
of uterus ... 108, 452
of vagina ... 107
of vulva ... 106
Epidermoid ... 387
CARCINOSIS, Abdominal ... 428, 431
CARDIAC DISEASE, Broken compensation in ... 141
Therapeutic abortion for ... 140
CARE of pregnant women ... 163
CARUNCLE, Urethral ... 22, 61
CERVICAL ATRESIA ... 82
Cicatricial ... 229
as a cause of dystocia ... 229
Gradual dilatation for ... 123
Polypus, sterility due to ... 122
CERVIX UTERI, Adeno-carcinoma of ... 427
Amputation of, for cancer ... 419
Anteflexion of ... 35
causing sterility ... 125
Atresia of ... 82, 122, 123, 229
Cancer of, complicating pregnancy ... 237
Carcinoma of ... 84
inoperable ... 429
Congenital anteflexion of ... 35
Congenitally small ... 329
Dilatation of, in treatment of sterility ... 129

PAGES

CERVIX UTERI, Dilatation of, prior to Cæsarean section 245
Lacerations of 101, 370, 373, 419
Hæmorrhage from 102, 336
CHANCROID of external genitalia 49
CHANCROIDAL INFECTIONS 21
CHILDHOOD 3
Functional disorders 3
Infections 3
Gonococcus 3, 10
Malformations 3
Neoplasms 4
Traumata, genital 4, 12
Ulceration of genitalia 4
CHORIO-EPITHELIOMA 108
CHRONIC NEPHRITIS, Induction of labor in 165
Pregnancy and labor in 165, 170
Question of therapeutic abortion in 165
CHRONIC SALPINGITIS 304
Exacerbation in puerperium 304, 349
CICATRICIAL CERVICAL ATRESIA 229
as a cause of dystocia 229
Cæsarean section for 229
CIRCUMCISION 7
CLIMACTERIC 407
Functional disturbances 407
Infections 409
Malformations and displacements 408
Neoplasms 409
Traumata 409
CLOACA, Persistent 3
COCCYGODYNIA 240
COCCYX, fracture-dislocations of 239
COINCIDENT tubal and intra-uterine pregnancy 194
COITUS, Interference with, by pessaries 26
Painful 74
COLD-WATER VAGINAL DOUCHES, Effect of 34
COLPOCLEISIS 104, 377
COLPO-PERINEORRHAPHY 413
COLPORRHAPHY, Anterior 413
COLPOTOMY for pelvic abscess 56
CONCEPTION after partial resection of ovary 117, 353
Prevention of 374
by lactation 114
by vaginal discharge 373
CONDOM, Effects of use of 120
CONDYLOMA ACUMINATA 63
CONDYLOMATA of vulva 105
CONGENITAL annular atresia of vagina 331
anteflexion of cervix 35
CONGENITALLY SMALL CERVIX 329
as a cause of sterility 329

PAGES
CONGESTION OF PELVIS ... 31, 33
CONSTIPATION, Puerperal pyrexia from ... 314
CONSTITUTIONAL TREATMENT for sterility ... 129
CONVULSIONS, with toxæmias of pregnancy ... 145, 150, 269
CORPUS UTERI ... 28
Adeno-carcinoma ... 397
Anteflexion ... 94
Carcinoma ... 108, 397
CURETTAGE in treatment of sterility ... 125
CYST, DERMOID ... 109, 432
of Bartholin's gland ... 45, 46
of ovary, 14, 29, 65, 66, 84, 109, 110, 115, 210, 349, 399, 400, 402, 425, 432, 454
Axial rotation of ... 66, 109, 399, 400, 402, 425
complicating pregnancy ... 210
hæmorrhagic ... 66
of vagina ... 22, 107
of vulva ... 106
of vulvo-vaginal glands ... 22
Parovarian or broad ligament ... 110
Tubo-ovarian ... 425
CYSTIC OVARIES, Degeneration of ... 29, 115, 349
CYSTOCELE ... 441, 446

D

DECIDUOMA MALIGNUM ... 108
DEGENERATION of cystic ovaries ... 29, 115, 349
DELAYED LABOR ... 79, 225
DENTISTRY in pregnancy ... 77
DERMOID CYST of ovary ... 109, 432
with axial rotation ... 402
DILATATION of cervix in treatment of sterility ... 129
prior to Cæsarean section ... 245
of hymen ... 119
DISORDERS of Menstruation (*see* Menstruation).
DISPLACEMENTS in climacteric ... 408
in maturity ... 72
of uterus ... 83, 88, 94
anteflexion of cervix or corpus ... 94
anteversion ... 94
inversion ... 97, 340, 341
lateroversions and lateroflexions ... 95
prolapse ... 96
retro-displacements ... 95, 115, 336, 342
in puberty and adolescence ... 21
of uterus ... 21, 25, 29
DISTENTION of bladder ... 173
by retroverted pregnant uterus ... 172
DOUBLE VAGINA ... 93
Labor in ... 328

PAGES

Douche, Vaginal 31
of cold water 34
of hot water 32
Effect on pelvic congestion 33
Dysmenorrhœa in maturity 74
in puberty and adolescence 20, 24, 25, 28, 29, 31, 35
membranous 20
Dyspareunia, Causes of 74
from absence of lubrication 120
from small introitus 120
from use of condom 120
from vaginismus 120
Dystocia from anomalies of bony pelvis 84
of expellent powers 78
of fœtal passenger 85
of maternal passage 81
of soft parts 81, 82
cicatricial cervical atresia 229
excessive fœtal development 250
fibro-myomata 232
posterior positions of occiput 257
subinvolution of vagina 227
vaginismus 225

E

Earache, Puerperal pyrexia from 322
Eclamptics, Subsequent pregnancies in 162, 170
Ectopic Pregnancy 78
Diagnosis of 179, 181
Enlargement of uterus in 181
Uncertainties of diagnosis of 183
Eczema Vulvae 417
Embolism, Pulmonary 218
Endometritis, Anile 449
Exfoliative 20
Hyperplastic 125
Septic, puerperal 286, 288
Enuresis 3, 5
Epidermoid Cancer of vulva 454
Carcinoma of vulva 387
Epididymitis, Double, as a cause of sterility 131, 133
Epithelioma of prolapsed urethra 450
of urethra 385
Examination, Physical, before betrothal 112
Vaginal, of girls and young women 22
Exfoliative Endometritis 20
Expellent Powers, Anomalies of 78
External Genitals, Chancroid of 49
Primary tuberculosis of 21
Syphilis of 49

PAGES

EXTERNAL GENITALS, Ulceration of, in infants and children 4
EXTROPHY OF THE BLADDER 3

F

FALLOPIAN TUBES, Pneumococcus infection of 359
Pregnancy in, abortion 183
coincident with uterine 194
Interstitial 191
Ruptured 185, 186, 189
Unruptured 179, 183
Resection of 52
FIBROIDS, Multiple uterine 392, 431, 432
FIBRO-MYOMA of uterus 452
Pedunculated 452
of vagina 421
FIBRO-MYOMATA causing dystocia 232
causing fœtal malposition 263
causing post-partum hæmorrhage 263
complicating labor 206, 232
complicating pregnancy 232
Effects of pregnancy on 236
of vagina 107
of vulva 106
relation to pregnancy and labor 264
FISTULA, Recto-vaginal 43, 103, 366
Recto-vulvar 364
Vesico-utero-vaginal 376, 377
Vesico-vaginal 103
FŒTAL DEATH, intra-uterine, Causes of 78
prognosis in placenta prævia 201
FŒTUS, Abnormal and undesirable presentation of .. 86, 214, 215, 250, 263, 380
Anomalies of, causing dystocia 85
Changes of position and presentation during pregnancy 250
Excessive development of 85, 250
Impending asphyxia of 213
Malformations of 86
Progressive increase in size of, in successive pregnancies 180
Sanctity of life of 141
FORCEPS, Straight, use in occipito-posterior positions 240, 260, 262
FOREIGN BODIES in bladder 4, 13
in vagina 4
FUNCTIONAL DISORDERS in anility 438
in infancy and childhood 3
in maturity 72, 73
in puberty and adolescence 19
of climacteric 407
FUNIS, Presentation of 214
Prolapse of 215
Manual reposition of 215

G

PAGES
GASTRO-INTESTINAL IRRITATION as a cause of puerperal pyrexia..... 316, 318
GAUZE PACKING in placenta prævia..... 199
GENERAL PERITONITIS..... 358
GENERAL STREPTOCOCCÆMIA by tonsillar invasion..... 280
GENITAL HERNIA..... 96, 412, 441, 443, 444, 446
Plastic operations for..... 412
GENITAL TRAUMATA contusions..... 12
in adolescence..... 21
in childhood..... 4, 12
Penetrating..... 12
GENITALIA, internal, Absence of..... 111
Ulceration of, in infants and children..... 4
GENITALS, external, Chancroid of..... 49
Primary tuberculosis of..... 21
Syphilis of..... 49
Traumata of..... 4, 12, 21
Ulceration of..... 4
GONOCOCCUS INFECTION in infancy and childhood..... 3, 10
in puberty and adolescence..... 21
Stigmata of..... 45, 46
GONORRHŒA in husband as a cause of sterility..... 131
GONORRHŒAL SALPINGITIS..... 52, 56
vulvo-vaginitis..... 4, 10
GYNATRESIAS..... 21

H

HÆMATOCELE, Pelvic..... 187
HÆMATOCOLPOS..... 37, 40
HÆMATOMA, Vulval..... 360
Vulvo-vaginal..... 12
HÆMATOMETRA..... 38, 40
HÆMATOSALPINX..... 38
HÆMORRHAGE, Ante-partum..... 77, 222
complicating pregnancy..... 77
from separation of normally seated placenta . 335
from laceration of cervix and broad ligament..... 102, 336
Internal, concealed..... 267
Intra-partum..... 88
from detachment of low-seated placenta..... 220
Post-partum..... 263, 266
from retained placenta succenturiata..... 269
Puerperal..... 88, 220
Secondary..... 268
HÆMORRHAGIC disease of the newborn..... 3
ovarian cyst..... 66
HERNIA, Genital..... 96, 412, 441, 443, 444, 446
Plastic operations for..... 412
Ovarian..... 3, 9
HERPES PROGENITALIS..... 346

PAGES

HOT-WATER vaginal douche ... 32
Effect on pelvic congestion ... 33
HYDATIDIFORM MOLE ... 208
HYMEN, Annular ... 118
Atresia of ... 38
Dilatation of ... 119
Impenetrable ... 118
Imperforate ... 21, 37, 40
Impervious ... 118
Resection of ... 119
HYPERINVOLUTION of uterus ... 73, 113
HYPERPLASTIC ENDOMETRITIS as a cause of sterility ... 125
HYPOCHONDRIASIS, Effect of operation on ... 395
HYSTERECTOMY ... 392
Complete ... 453
Supra-vaginal ... 392
Vaginal ... 446

I

IMPENDING FŒTAL ASPHYXIA, Signs of ... 213
IMPENETRABLE HYMEN ... 118
IMPERFORATE ANUS ... 3, 43
hymen ... 21, 37, 40
rectum ... 3
vagina ... 21
IMPERVIOUS HYMEN ... 118
IMPORTANCE of ante-partum examination ... 85, 87, 163
INCARCERATION of retroverted pregnant uterus ... 172
INCOMPETENCE of husband as cause of sterility ... 127, 132
INFANCY, Functional disorders in ... 3
Infections in ... 3
Gonococcus ... 3
Malformations in ... 3
Neoplasms in ... 4
Traumata in ... 4
Ulceration of genitalia in ... 4
INFECTION by tonsillar invasion ... 280
Chancroidal ... 21
General peritonitis ... 358
streptococcæmia ... 280
Gonococcus ... 3, 10, 21, 45, 46
in anility ... 438
in climacteric ... 409
in infancy and childhood ... 3
in maturity ... 72, 98
in puberty and adolescence ... 21, 45, 46
Pneumococcus ... 359
Præpuerperal streptococcus ... 276
Puerperal ... 88
Mixed ... 284

PAGES

INFECTION, Puerperal, Prevention of 88
Symptomatology and diagnosis 89
Treatment 92
Tubercular 21
INFLATABLE, hydrostatic rubber bag 168
INJURIES (*see* Trauma).
INOPERABLE CARCINOMA of the cervix 429
Vesical fistulae 377
Colpocleisis in 377
INSEMINATION without penetration 119
INTERNAL CONCEALED HÆMORRHAGE 267
genitalia, Absence of 111
INTRA-PARTUM HÆMORRHAGE 88
from detachment of low-seated placenta 220
INTRA-UTERINE FŒTAL DEATH, Causes of 78
INTRA-UTERINE MYOMA 422
Pedunculated 422
Sessile 422
INVERSION OF UTERUS, Acute 97, 340
Chronic 97, 341

J

JUSTO-MINOR PELVIS, Cæsarean section for 241, 243, 247

L

LABOR after trachelorrhaphy 371
after uterine rupture and suture 381
complicated by cancer of cervix uteri 237
complicated by fibro-myomata 206, 232, 264
Delayed 79, 225
Double vagina in 328
in chronic nephritis 165, 170
in uterus bicornis unicollis 333
Management of occipito-posterior positions 240, 257, 260, 262
Painless 223
Pathologic 78
Precipitate 79, 223
Test of, in border-line cases 242
LACERATIONS of cervix uteri 101, 336, 370, 373, 419
Hæmorrhage from 102
Reflex symptoms of 370
of vagina in coitus 361
LACTATION, as a preventive of conception 114
prolonged, Effects of 113
LA GRIPPE, Puerperal pyrexia from 308
LATEROFLEXIONS of uterus 95
LATEROVERSIONS of uterus 95
LEGAL RIGHTS of posthumous children 264
LEIOMYOMA 115
LIPOMATA of vulva 106
LONG ENGAGEMENTS 31

M

PAGES

MALFORMATIONS in anility ... 438
in climacteric ... 408
in infancy and childhood ... 3
in maturity ... 72, 93, 94
double vagina ... 93
of uterus ... 94
vaginal atresias ... 81, 93
in puberty and adolescence ... 21
of fœtus ... 86
MALIGNANT ADENOMA of uterus ... 432
MARITAL RELATIONS, Effect of, on scanty menstruation ... 73
MASTITIS, Puerperal pyrexia from ... 324, 326
MASTURBATION ... 7
MATERNAL PASSAGE, Anomalies of, causing dystocia ... 81
MATURITY ... 71
Dysmenorrhœa in ... 74
Functional disturbances in ... 72, 73
Infections in ... 72, 98
Malformations and displacements in ... 72, 93, 94
Neoplasms in ... 73, 105
Traumata in ... 72, 100
MEMBRANOUS DYSMENORRHŒA ... 20
MENORRHAGIA ... 73
MENSTRUAL FLOW, normal average amount ... 38
MENSTRUATION, Disorders of, in maturity ... 73
Effect of early obesity on ... 73
Excessive ... 73
Ovulation without ... 111
Precocious ... 3
Scanty, effect of marital relations on ... 73
METRORRHAGIA ... 73
MISCARRIAGE ... 178
MITRAL LESIONS complicating pregnancy ... 137
MIXED PUERPERAL INFECTION ... 284
MUCOUS CYSTS of vagina ... 389
MULTIPLE FIBROSIS of uterus ... 392, 431, 432
MYOMA, uterine, Subperitoneal ... 423, 425
MYOMATA of the uterus ... 83, 394, 424
MYOMECTOMY ... 115, 206, 425

N

NEOPLASMS complicating pregnancy ... 77
in anility ... 439
in climacteric ... 409
in infancy and childhood ... 4
in maturity ... 73, 105
in puberty and adolescence ... 22
of ovary ... 83, 109, 432
dermoid cysts ... 109

PAGES
NEOPLASMS of ovary, parovarian or broad-ligament cysts ... 110
of uterus ... 83, 107
carcinoma of corpus ... 108
chorio-epithelioma ... 108
deciduoma malignum ... 108
fibro-myomata ... 107
sarcoma ... 109
of vagina ... 107
carcinoma ... 107
cysts ... 107
fibro-myomata ... 107
of vulva ... 105
carcinoma ... 106
condylomata ... 105
cysts ... 106
lipomata and fibro-myomata ... 106
papillomata ... 105
NEPHRITIS, chronic, Induction of labor in ... 165
Pregnancy and labor in ... 165, 170
Question of therapeutic abortion in ... 165
NEWBORN, Hæmorrhagic disease of ... 3
NIPPLES, Absence of ... 23
NURSES, obstetrical, Engagement of ... 182

O

OBESITY ... 23
as a cause of sterility ... 133
early, Effect of, on menstruation ... 73
OBSERVATION and care of pregnant women ... 163
OBSTETRICAL NURSES, Engagement of ... 182
OCCIPITO-POSTERIOR POSITIONS, Management of ... 257
Manual rotation in ... 260
Mechanism of anterior rotation in ... 260
Use of forceps in ... 240, 260, 262
OLD AGE (*see* Anility) ... 437
OPERATION, Effect of, on hypochondriasis ... 395
Os UTERI, Pin-hole ... 329
OVARIAN ABSCESS ... 352
cyst, 14, 29, 65, 66, 84, 109, 110, 115, 210, 349, 399, 400, 402, 425, 432, 454
Axial rotation of ... 66, 109, 399, 400, 402, 425
complicating pregnancy ... 210
Hæmorrhagic ... 66
cystoma ... 65, 84
with axial rotation ... 66, 399, 400, 402
hernia ... 3, 9
insufficiency ... 35
neoplasms ... 83
sarcoma ... 16
OVARIOTOMY ... 454

PAGES

OVARY, Abscess of ... 352
Cyst of, 14, 29, 65, 66, 84, 109, 110, 115, 210, 349, 399, 400, 402, 425, 432, 454
Axial rotation of ... 66, 109, 399, 400, 402, 425
complicating pregnancy ... 210
Hæmorrhagic ... 66
Cystic degeneration of ... 29, 115, 349
Cystoma of ... 65, 84
with axial rotation ... 66, 399, 400, 402
Dermoid cyst of ... 109, 402, 432
Hernia of ... 3, 9
Neoplasms of ... 83, 109, 110, 432
dermoid cysts ... 109, 432
parovarian or broad-ligament cysts ... 110
Prolapse of ... 29
Resection of ... 115
[Conception after partial ... 117, 353
Pain after ... 115
Sarcoma of ... 16
Sclerosis of ... 20
OVULATION without menstruation ... 111

P

PAINLESS LABOR ... 223
PAN-HYSTERECTOMY ... 453
PAPILLOMATA of vulva ... 105
PAROVARIAN CYSTS ... 110
PATHOLOGIC LABOR ... 78
Puerperium ... 88
PEDICULOSIS PUBIS ... 63
PEDUNCULATED INTRA-UTERINE MYOMA ... 422
PELVIC ABSCESS ... 56, 355, 356
Colpotomy for ... 56
Pointing of ... 356
adhesions ... 336
congestion, Glycerine tampons for relief of ... 33
Value of hot water douches in ... 31
floor, Tears of ... 100
hæmatocele ... 187
PELVIS, bony, Anomalies of, causing dystocia ... 84
Congestion of ... 31, 33
Generally contracted, flat, rachitic ... 246, 320
Hæmatocele of ... 187
Justo-minor ... 241, 243, 247
Tears of floor of ... 100
PERINEUM, Penetrating wound of ... 12
PERITONITIS, General ... 358
PERSISTENT CLOACA ... 3
PESSARIES, Care of ... 26
Hard rubber lever ... 25

PAGES

PESSARIES, interference with coitus 26
Intra-uterine 31
Glass 35
stem in treatment of sterility 125, 129
Soft rubber lever 25, 337, 338
PHLEBITIS, Puerperal 298
thrombo, Septic 300
PHOSPHATIC DEPOSITS, Removal of 376
PHYSICAL EXAMINATION before betrothal 112
PIN-HOLE os uteri 329
PLACENTA PRÆVIA, Blood transfusion in acute anæmia of 200
Cæsarean section in 205
Complete 199
Fœtal prognosis in 201
Gauze packing in 199
Internal podalic version in 199, 201, 203
Marginal 203, 205
Partial 201
PLACENTA SUCCENTURIATA 267
Post-partum hæmorrhage from 269
PLASTIC OPERATIONS for genital hernia 412
PNEUMOCOCCUS INFECTIONS 359
POSTHUMOUS CHILDREN, Legal rights of 264
POST-PARTUM HÆMORRHAGE 263, 266
from retained placenta succenturiata 269
POSTURAL TREATMENT in O. D. P. labors 257
PRÆPUERPERAL STREPTOCOCCUS INFECTION 276
PRECIPITATE LABOR 79, 223
PRECOCIOUS MENSTRUATION 3
PREGNANCY, after resection of ovaries 117, 353
Ante-partum hæmorrhage complicating 77
Appendectomy during 175
Appendicitis complicating 175
Cancer of cervix complicating 237
Changes of position of fœtus during 250
Chronic nephritis in 165, 170
Convulsions in 145, 150, 269
Eliminative and sedative treatment of 145
Dentistry in 77
Disturbances of 76
Ectopic 78
Diagnosis of 179, 181, 183
Enlargement of uterus in 181
Fibro-myomata in 232, 236, 264
Mitral insufficiency in 137
Mitral stenosis in 140
Neoplasms complicating 77
Ovarian cyst complicating 210
Progressive increase in size of successive fœtus 180
Salivation in 134
Subsequent, in eclamptics 162, 170

PAGES
PREGNANCY, Successive, after removal of one tube ... 180
Surgical complications of ... 77
Toxæmias of, 77, 137, 142, 144, 145, 147, 148, 150, 151, 153, 154, 155 156, 158, 160, 163, 269
Vomiting in ... 142, 144
Tubal, Coincident with intra-uterine pregnancy ... 194
Interstitial ... 191
unruptured ... 179, 183
ruptured ... 185, 189
Blood transfusion in ... 186
PREGNANT WOMEN, Observation and care of ... 163
PREPUTIAL ADHESIONS ... 7
PRESENTATION OF FŒTUS, Abnormal and undesirable, 86, 214, 215, 250, 263, 380
PREVENTION OF CONCEPTION ... 374
by lactation ... 114
by vaginal discharge ... 373
PRIMARY AMENORRHŒA ... 111
PROCIDENTIA ... 96
of uterus ... 441, 443, 444, 446
PROGRESSIVE increase in size of successive fœtus ... 180
PROLAPSE of anterior vaginal wall ... 444
of ovary ... 29
of uterus ... 96
of vagina ... 441
PROLAPSED URETHRA ... 450
Epithelioma of ... 450
Resection of ... 450
PROLONGED LACTATION, Effects of ... 113
PROPHYLACTIC TREATMENT of pregnancy toxæmias ... 163
PROPHYLAXIS of puerperal infections ... 88
PRURITUS VULVÆ ... 415
PSYCHICAL DISTURBANCES, Puerperal pyrexia from ... 312
Fever in puerperium ... 313
PUBERTY ... 19
Amenorrhœa in ... 19, 23
Dysmenorrhœa in ... 20
Infections in ... 21
Malformations and displacements in ... 21
Neoplasms in ... 21
Traumata in ... 21
PUBIS, Pediculosis ... 63
PUERPERAL endometritis, septic ... 286, 288
hæmorrhages ... 88, 220
infections ... 88
Mixed ... 284
Prophylaxis of ... 88
Symptomatology and diagnosis of ... 89
Treatment of ... 92
phlebitis ... 298
pyelitis ... 294, 296
pyrexia ... 271

PAGES

PUERPERAL pyrexia from alveolar abscess 320
from constipation 314
from earache and sinusitis 322
from gastro-intestinal irritation 316, 318
from La Grippe 308
from mastitis 324, 326
from psychical disturbance 312
from scarlatina 310
from urticaria 306
salpingitis 302, 304, 354
septic thrombo-phlebitis 300
septicæmia 390
with septic tonsillitis 292
PUERPERIUM, Chronic salpingitis in 304, 349
Pathologic 88
Psychical fever in 313
PULMONARY EMBOLISM 218
PUS-TUBES, Possibility of rupture of 55
PYELITIS, Puerperal 294, 296
PYREXIA, Puerperal, from alveolar abscess 320
from constipation 314
from earache and sinusitis 322
from gastro-intestinal irritation 316, 318
from La Grippe 308
from mastitis 324, 326
from psychical disturbance 312
from scarlatina 310
from urticaria 306

R

RAPE 21
RECTO-ANO-PERINEORRHAPHY 366
RECTOCELE 446
RECTO-VAGINAL FISTULA 43, 103, 366
RECTO-VULVAR FISTULA 364
RECTUM, Imperforate 3
RESECTION of Fallopian tubes 52
of hymen 119
of ovaries 115
Conception after 117, 353
RETENTION of urine 14, 173
RETRO-DISPLACEMENTS of uterus 95
RETROFLEXION of uterus 25, 29, 95, 115
RETROVERSION of uterus 25, 29, 95, 336, 342
pregnant, incarceration of 172
RUBBER BAG, inflatable hydrostatic, use of 168
RUPTURE of the anal sphincter 366
of uterus 104
Spontaneous 380
Traumatic 382

Pages

Rupture of uterus, Treatment by drainage 383
Treatment by suture 381
Ruptured Tubal Pregnancy 185, 189
Blood transfusion in 186

S

Salivation of pregnancy 134
Salpingitis, Acute 258
Chronic 304
Gonorrhœal 52, 56
Puerperal 302, 304, 354
Subacute 352
Tubercular 58
Sanctity of fœtal life 141
Sarcoma of ovary 16
of uterus 109
Scarlatina, Puerperal pyrexia from 310
Sclerosis of the ovary 20
Secondary Hæmorrhage 268
Septicæmia, Puerperal 290
with septic tonsillitis 292
Sessile Intra-uterine Myoma 422
Sexual Orgasm, Absence of, as a cause of sterility 123, 126
Shoulder Presentation 214
with prolapse of arm and funis 380
Sinusitis, Puerperal pyrexia from 322
Skene's Glands, Abscess of 46
Soft Parts, Anomalies of, causing dystocia 81
Solid Tumors of ovary 110
Splanchnoptosis 97
as a factor in diseases of women 343
Spontaneous Rupture of uterus 380
Straight Forceps, Use of, in occipito-posterior positions 240
Strength of uterine scars 384
Streptococcæmia, General, by tonsillar invasion 280
Streptococcus Infection, præpuerperal 276
Sterility, Causes of 75
absence of sexual orgasm 123, 126
anteflexion of cervix 125
cervical atresia 123
cervical polypus 122
congenitally small cervix 329
double epididymitis 131, 133
gonorrhœa in husband 131
hyperplastic endometritis 125
incompetence of husband 127, 132
obesity 133
treatment by constitutional means 129
curettage, intra-uterine stem pessary 125, 129
rapid dilatation of cervix 129

PAGES

SUBINVOLUTION of uterus ... 88
of vagina as a cause of dystocia ... 227
SUBPERITONEAL UTERINE MYOMA ... 423, 425
Pedunculated ... 423
Sessile ... 423
SUBSEQUENT PREGNANCIES in eclamptics ... 162, 170
SUCCESSIVE PREGNANCIES after removal of one pregnant tube ... 180
SUPERFECUNDATION ... 197
SUPERFETATION ... 197
SUPRA-VAGINAL HYSTERECTOMY ... 392
SURGICAL COMPLICATIONS in pregnancy ... 77
SYPHILIS of external genitalia ... 49
SYPHILITIC PRIMARY LESIONS ... 21

T

TARDY LABOR ... 79
TEARS of cervix ... 101, 102, 370, 373, 419
of pelvic floor ... 100
of vagina ... 100, 361
of vaginal outlet ... 100
of vulva ... 100
THERAPEUTIC ABORTION ... 141
for cardiac disease ... 140
in chronic nephritis ... 165
THIGH-RUBBING ... 7
TONSIL, Septic, Cause of general streptococcæmia ... 280
with puerperal septicæmia ... 292
TOXÆMIAS OF PREGNANCY ... 77, 137
Anæsthesia in treatment of ... 150
Anæsthol in treatment of ... 150
Cæsarean section in ... 147
Prophylactic treatment in ... 163
Vomiting in ... 142, 144
with convulsions, 145, 150, 151, 153, 154, 155, 156, 158, 160, 269
Eliminative and sedative treatment of ... 145, 148
TOXÆMIC GRAVIDA as a surgical risk ... 146
vomiting ... 142
Rectal saline seepage for ... 144
Therapeutic abortion for ... 144
TRACHELORRHAPHY, Labor after ... 371
TRANSVERSE POSITION of fœtus ... 263
Internal podalic version for ... 263
TRAUMATA, GENITAL, in anility ... 439
in children ... 4, 12
in climacteric ... 409
in maturity ... 72, 100
injuries of recto-vaginal and vesico-utero-vaginal septa ... 103
of uterus ... 104

PAGES

TRAUMATA, GENITAL, in maturity, lacerations of cervix...101, 336, 370, 373, 419
tears of vulva and vaginal outlet and pelvic floor.... 100
in puberty and adolescence.... 21
TUBAL ABORTION.... 183
TUBAL PREGNANCY, Ruptured.... 185, 189
Blood transfusion in.... 186
coincident with intra-uterine pregnancy.... 194
Interstitial.... 191
Unruptured.... 179, 183
TUBERCULAR INFECTION of internal genitalia.... 21
salpingitis.... 58
TUBERCULOSIS, Primary, of external genitals.... 21
TUBO-OVARIAN ABSCESS.... 356
TUBO-OVARIAN CYST.... 425
Axial rotation of.... 425

U

ULCERATION of genitalia in infants and children.... 4
UNRUPTURED TUBAL PREGNANCY.... 179, 183
URETHRA, Abscess about the.... 348
Angioma of.... 22, 61
Caruncle of.... 22, 61
Epithelioma of.... 385
Prolapsed.... 450
URINE, Retention of.... 14, 173
URTICARIA, Puerperal pyrexia from.... 306
USE OF VAGINAL TAMPONS.... 375
UTERINE fibroids, Multiple.... 392, 431, 432
myoma, Pedunculated.... 423
Sessile.... 423
Subperitoneal.... 423
myomata.... 83, 394
indications for removal.... 424
scars, Strength of.... 384
UTERUS, Absence of.... 21
Acute inversion of.... 340
Adeno-carcinoma of.... 452
Anteflexion of cervix and corpus.... 94
Anteversion.... 94
bicornis unicollis, Labor in.... 333
Carcinoma of corpus.... 108
Chronic inversion of.... 341
Chorio-epithelioma.... 108
Deciduoma malignum.... 108
Displacements of, 21, 25, 29, 73, 83, 88, 94, 95, 96, 97, 113, 115, 340, 341, 342
Enlargement of, in ectopic pregnancy.... 181
Eventration of, in Cæsarean section.... 244
Fibro-myoma of.... 452

PAGES

UTERUS, Fibro-myomata of 107
Hyperinvolution of 73, 113
inversion, Acute and chronic 97
Malformations of 25, 29, 94, 95, 115, 336, 342
Malignant adenoma of 432
Multiple fibroids of 392, 431, 432
Multiple myomata of 394, 424
Myomata of 83
Neoplasms of 83, 107, 108, 109
Prolapse of 96
Retroflexion of 25, 29, 95, 115
Retroversion of 25, 29, 95, 172, 336, 342
Rupture of 104, 380, 381, 382, 383
Sarcoma of 109
Subinvolution of 88
Ventral suspension of 29, 115

V

VAGINA, Absence of 21, 42, 111
Atresia of 81, 93, 331
Carcinoma of 107
Cysts of 22, 107
Double 93, 328
Fibro-myoma of 421
Fibro-myomata of 107
Foreign bodies in 4, 13
Imperforate 21
Laceration of, in coitus 361
Mucous cysts of 389
Neoplasms of 107
Subinvolution of, as a cause of dystocia 227
Tears of 100
VAGINAL ATRESIA 81, 93, 331
carcinoma 107
cysts 22, 107
discharge, as a preventive of conception 373
douche 31
cold water 34
hot water, for pelvic congestion 33
examination of girls and young women 22
hysterectomy 446
outlet, Tears of 100
section 56, 355
tampons, Use of 375
VAGINISMUS 118
Causes of 75
Dysparenuria caused by 120
Dystocia caused by 225
Results of 75
VARICOSITIES of vulva 217

PAGES
VENEREAL WARTS 21, 63
VENTRAL SUSPENSION of uterus 29, 115
Pain after 115
VESICO-UTERO-VAGINAL FISTULA 376
VESICO-VAGINAL FISTULAE 103
VOMITING, Toxæmic, of pregnancy 142, 144
VOORHEES INFLATABLE HYDROSTATIC RUBBER BAG, Use of 168
VULVA, Atresia of 81
Carcinoma of 106, 387
Condylomata of 105
Cysts of 106
Eczema of 417
Epidermoid cancer of 454
Epidermoid carcinoma of 387
Fibro-myomata of 106
Hæmatoma of 360
Lipomata of 106
Neoplasms of 105
Papillomata of 105
Pruritus of 415
Tears of 100
Varicosities of 217
VULVO-VAGINAL abscess 21
glands, Cysts of 22
hæmatoma 12
VULVO-VAGINITIS, Anile 448
Gonorrhœal 4, 10
in children, Causes of 4

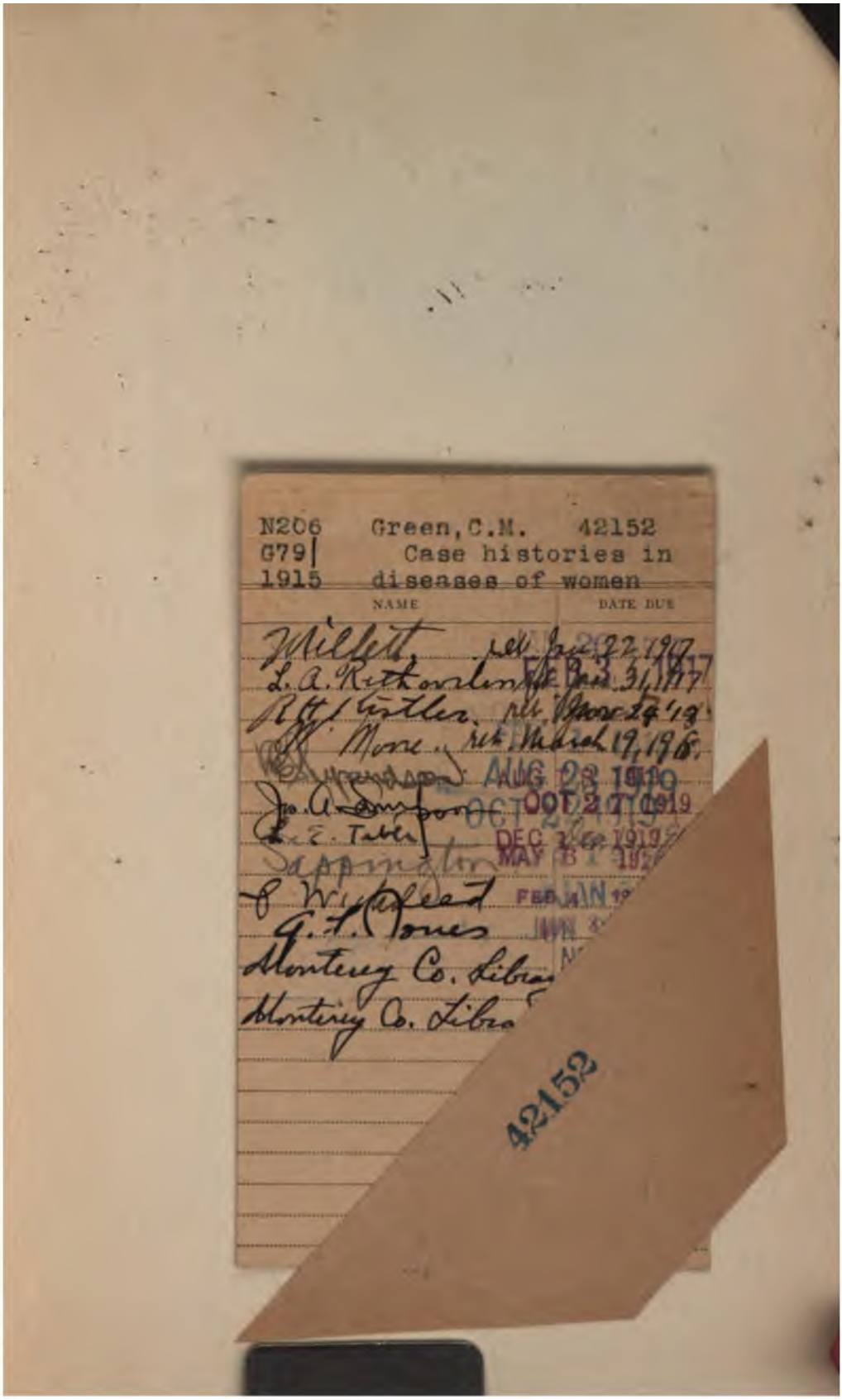
W

WARTS, Venereal 21, 63

LANE MEDICAL LIBRARY

To avoid fine, this book should be returned on or before the date last stamped below.

FEB 3 1917
Nov. 24 17.
NOV 16 1934
1919
1919


N206
G79
1915
Green, C.M. 42152
Case histories in diseases of women
NAME
DATE DUE
Millett
L. A. Rethorst
Rt. Tittler
Moore
Simpson
E. Tabler
Sappington
Wrightsman
G. L. Jones
Monterey Co. Libra
Monterey Co. Libra
FEB 3 1917
AUG 28 1919
OCT 27 1919
DEC 1919
MAY 1
FEB
JUN
42152